

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



FILED
10-11-16
04:59 PM

Order Instituting Investigation And Order to Show Cause on the Commission's Own Motion into the Operations and Practices of Pacific Gas and Electric Company with Respect to Facilities Records for its Natural Gas Distribution System Pipelines.

I.14-11-008
(Filed November 20, 2014)

**PACIFIC GAS AND ELECTRIC COMPANY'S
RESPONSE TO THE APPLICATION FOR REHEARING OF DECISION 16-08-020
SUBMITTED BY THE SAFETY AND ENFORCEMENT DIVISION**

LISE H. JORDAN
ELIZABETH COLLIER
Law Department
Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105
Telephone: (415) 973-6965
Facsimile: (415) 973-0516
Email: lhj2@pge.com
Email: eacp@pge.com

MARIE L. FIALA
JOSHUA HILL
Sidley Austin LLP
555 California Street
San Francisco, CA 94104
Telephone: (415) 772-1200
Facsimile: (415) 772-2400
Email: mfiala@sidley.com
Email: jhill@sidley.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

Dated: October 11, 2016

I. INTRODUCTION

Pursuant to Rule 16.1(d) of the Commission's Rules of Practice and Procedure, Pacific Gas and Electric Company (PG&E) hereby responds in opposition to the Safety and Enforcement Division's (SED) application for rehearing of Decision 16-08-020 (Application).

SED's Application disputes the evidentiary findings underlying the Decision or raises non-legal issues. The Application, therefore, fails to identify a "legal error" warranting rehearing by the Commission. The questions raised in the OII were thoroughly investigated over the course of nearly 18 months, including more than 400 pages of written testimony from eight fact witnesses and five experts on gas distribution recordkeeping.¹ The parties submitted extensive post-trial briefing.² SED and the City of Carmel unsuccessfully appealed the same issues raised in this Application.³ Because the Application fails to identify any legal error, it should be denied.

PG&E's brief is organized as follows:

First, PG&E demonstrates that the Commission's determination that PG&E's "alternative method" for setting maximum allowable operating pressure (MAOP) for certain distribution systems complies with the applicable regulations is supported by substantial evidence, and thus does not constitute legal error.

¹ Order Instituting Investigation and Order to Show Cause, I. 14-11-008 (Nov. 20, 2014) at 10–11; Ex. 1 (PWA Report); Ex. 2 (PWA Rebuttal); Ex. 3 (TURN Testimony); Ex. 4 (PG&E Reply Testimony); Exs. 5-10 (PG&E Reply Testimony Supporting Attachments); Ex. 43 (Carmel Testimony, Calhoun); Ex. 44 (Carmel Testimony, Burnett). This submission addresses the facts as reflected in the evidentiary record in this matter, and those facts are accordingly accurate as of the close of the record.

² SED Opening Post-Hearing Brief (Feb. 26, 2016); Carmel Opening Post-Hearing Brief (Feb. 26, 2016); The Utility Reform Network Opening Post-Hearing Brief (Feb. 26, 2016); PG&E Opening Post-Hearing Brief (Feb. 26, 2016); SED Reply Post-Hearing Brief (Apr. 1, 2016); Carmel Reply Post-Hearing Brief (Apr. 1, 2016); PG&E Reply Post-Hearing Brief (Apr. 1, 2016).

³ Carmel Appeal of the Presiding Officer's Decision (June 28, 2016); SED Appeal of the Presiding Officer's Decision (July 1, 2016); *Decision Regarding Investigation of Pacific Gas and Electric Company's Gas Distribution Facilities Records*, D.16-08-020 (Aug. 26, 2016) (Decision).

Second, PG&E explains that the Commission’s finding that PG&E’s distribution system is “generally compliant” is supported by substantial evidence, that the isolated instances identified by SED are not sufficient to undermine the Commission’s determination, and that this finding thus does not constitute legal error.

Third, PG&E shows that there was no legal error in setting the \$12.052 million fine for the missing De Anza Division paper records because that finding is fully supported by the factual record.

Fourth, PG&E explains that a typographical, but non-substantive, error in the description of the Fresno incident is not legal error warranting a rehearing.

Fifth, PG&E attaches as an Appendix—and incorporates by reference—its response to the appeals of SED and Carmel, which provides further support for the Commission’s findings that are challenged in the Application.⁴

II. LEGAL STANDARD

Under Rule 16.1, a party may file an application for rehearing in order to “alert the Commission to a legal error.”⁵ The fact that the record contains some evidence contrary to the Commission’s holding does not indicate that the Decision commits legal error.⁶ Instead, the substantial evidence test applies and requires that all reasonable doubts be resolved in favor of the Commission’s decision.⁷ This test asks whether, “based on the evidence before the agency, a

⁴ See Appendix (PG&E’s Response to the Appeals of SED and City of Carmel-by-the-Sea (PG&E Response to Appeals)).

⁵ Commission Rule 16.1(c).

⁶ *In the Matter of the Application of San Diego Gas & Elec. Co. (U 902 E) for a Certificate of Pub. Convenience and Necessity for the Sunrise Powerlink Transmission Project*, D.09-07-024 at 2 (holding that the vast majority of petitioner’s arguments for rehearing were improper attempts to relitigate evidentiary issues decided by the Commission).

⁷ See, e.g., *Util. Consumers’ Action Network v. PUC*, 187 Cal. App. 4th 688, 696–97 (2010).

reasonable person could not reach the conclusion reached by the agency.”⁸ If the record contains substantial evidence supporting a determination, then the determination does not constitute legal error and the application for a rehearing should be denied.⁹

III. SUBSTANTIAL EVIDENCE SUPPORTS THE COMMISSION’S FINDING THAT PG&E’S ALTERNATIVE METHOD FOR SETTING MAOP ON CERTAIN SYSTEMS WAS PERMITTED BY THE REGULATIONS.

In this proceeding, SED contended that the “alternative method” PG&E used to set the MAOP on approximately 243 of its distribution systems violated 49 C.F.R. § 192.619. Based on its review of this regulation and related PHMSA guidance, the Commission concluded that the alternative method used by PG&E was permitted.¹⁰ The Commission found that this conclusion was further supported by the fact that PG&E had repeatedly disclosed the alternative method to Commission staff over the years without the Commission raising any objections.¹¹ SED’s Application merely resubmits the same argument on this issue that was made and rejected in its appeal of the Decision.¹² The arguments made in PG&E’s Response to SED’s Appeal still apply and can be found in the Appendix.¹³

SED’s argument is based, in large part, on a letter PG&E sent SED in 2010 in which PG&E admitted a violation of section 192.619 when it was unable to locate any MAOP documentation for a particular system in Colusa.¹⁴ Unlike the use of the alternative method, the Colusa system was in violation of section 192.619 because, as PG&E’s letter explained, it “could

⁸ *Harris v. City of Costa Mesa*, 25 Cal. App. 4th 963, 969 (1994).

⁹ *Barthelemy v. Chino Basin Mun. Water Dist.*, 38 Cal. App. 4th 1609, 1620 (1995).

¹⁰ D. 16-08-020 at 33.

¹¹ *Id.*

¹² SED Application at 2–4; SED Appeal at 8–9.

¹³ Appendix (PG&E Response to Appeals) at 34–37.

¹⁴ SED Application at 3 (*citing* Ex. 7, Attachment W106 at W106.013 (Letter from Glen Carter, PG&E to Banu Acimis, Cal. Pub. Utils. Comm’n)).

not locate *any* MAOP documentation” for that particular system.¹⁵ In other words, PG&E was missing the records that show what MAOP had been established and how it was established.¹⁶ No matter whether the alternative method or some other method is used to establish the MAOP, PG&E procedures require the creation and maintenance of documentation reflecting that process.¹⁷ PG&E did not suggest that it was missing such documentation for any of the 243 distribution systems at issue in this proceeding.¹⁸ Finally, it is wrong to suggest that the Commission committed legal error by not imposing a penalty for the violation in Colusa because at no previous point in this proceeding did SED suggest that the Commission should impose a penalty for that event.¹⁹

IV. THE COMMISSION’S CONCLUSION THAT PG&E’S DISTRIBUTION SYSTEM IS “GENERALLY COMPLIANT” WAS NOT LEGAL ERROR.

SED argues that the Commission committed legal error by concluding without substantial evidence that PG&E’s gas distribution recordkeeping is “generally compliant” with the regulations, but SED does not present a factual showing that would support that argument.²⁰ PG&E presented extensive—and almost entirely undisputed—evidence that PG&E has an accuracy rate for locating and marking its facilities of approximately 99.98%, reflecting the

¹⁵ Ex. 7, Attachment W106 at W106.013 (Letter from Glen Carter, PG&E to Banu Acimis, Cal. Pub. Utils. Comm’n) (emphasis added).

¹⁶ *Id.*

¹⁷ Ex. 7, Attachment W098 at W098.004 (Utility Procedure TD-4125P-01, Rev. 0, Establishing and Maintaining Distribution MAOP Records).

¹⁸ SED Application at 2. The only citation SED provides for this claim is a statement in PG&E’s Opening Post-Hearing Brief which explained that PG&E was unable to locate “paper records reflecting the operating pressure” during the five years preceding July 1, 1971 for the approximately 243 systems. *id.* n. 4 (*citing* PG&E Opening Post-Hearing Brief at 57). If PG&E had merely been missing such records for the system in Colusa, it would not have reported that it could not locate “any MAOP documentation,” nor would it have agreed to the violation.

¹⁹ SED Application at 3–5. In fact, prior to its appeal of the Presiding Officer’s Decision, the Colusa occurrence was only cited once by SED, and it was in support of SED’s claim that the alternative method was prohibited. Ex. 1 (PWA Report) at 49–51.

²⁰ SED Application at 8–9.

lowest rate of excavation damage in California and near the top performance quartile compared to averages for operators in each of the other states.²¹ SED’s experts in this proceeding agreed that an operator’s ability to avoid excavation damage is the key indicator, not just of system safety generally, but also of the accuracy and completeness of its maps and records.²² SED’s experts did not dispute these statistics or the conclusions that PG&E’s experts drew about their implications for the safety of PG&E’s system.²³ SED has provided no reason to revisit the Commission’s fact-intensive determination on this issue, much less to conclude that it constituted “legal error.”

SED argues, as it did on appeal, that despite these objective measures of PG&E’s performance, the presence of certain imperfections in PG&E’s distribution recordkeeping prevents the Commission from concluding that PG&E’s system is “generally compliant.”²⁴ The arguments expressed in PG&E’s Response to SED’s Appeal remain valid,²⁵ and none of the examples identified in the Application undermine the Commission’s overall conclusion:

- Nowhere does the Decision state that there is any evidence of thousands of unmapped inserts.²⁶

²¹ Ex. 4 at 8-16 to 8:23 (PG&E Testimony, Paskett); Ex. 10 at 8-22(PG&E Errata to Reply Testimony, Paskett); *see* Ex. 4 at 7-13 to 7-14, 7-Ex.2 (PG&E Reply Testimony, Huriaux); *see* 1/19/16 Tr. at 51:22 to 54:15 (SED/PWA) (noting that PWA has not done an analysis of the publicly available PHMSA data set forth in Mr. Paskett’s report, but that PWA has no reason to doubt the data or conclusions presented by Mr. Paskett); 1/20/16 Tr. at 329:2-10 (PG&E/Higgins) (explaining that PG&E’s facilities suffer no damage in connection with “99.98 percent” of USA tickets).

²² 1/19/16 Tr. at 49:22 to 50:8 (SED/PWA); Ex. 4 at 8-4, 8-16, 8-17 (PG&E Reply Testimony, Paskett).

²³ 1/19/16 Tr. at 49:22 to 50:8, 51:22 to 54:16 (SED/PWA).

²⁴ SED Application at 8–9; SED Appeal at 1–2.

²⁵ Appendix (PG&E Response to Appeal) at 12-21.

²⁶ SED Application at 8 (*citing* D.16-08-020 at 23).

- Since the Carmel incident in 2014, PG&E has not experienced any incidents related to unmapped plastic inserts or even encountered any through its systemwide use of the Gas Carrier Pipe Checklist, a tool designed to find such inserts.²⁷
- No evidence in this proceeding suggests that uninstalled locating wires present a systemic problem,²⁸ as locating wires accounted for 17 dig-ins over a two-year span, a fraction of a percent of total dig-ins over that period.²⁹
- SED’s argument that the Decision’s statement that “[a] system that works over 99% of the time is not a *system* in need of improvement” “contravenes” Public Utilities Code section 451 by allowing for a system that is “only 99% safe”³⁰ is contradicted by (1) the sentence in the Decision immediately following the one challenged by SED, which states: “[I]solated failures . . . must draw consequences to create incentives for constant improvement in execution;”³¹ and (2) the Commission’s imposition of penalties for individual incidents, including for violations of section 451.³²

There is no legal error in the Decision that warrants overturning this conclusion. Further, the record is replete with evidence that PG&E has embarked upon numerous improvement initiatives to enhance the accuracy and accessibility of its gas distribution records, backstop these records with in-the-field practices to add layers of protection, and implement other

²⁷ 1/20/16 Tr. at 306:2-8 (PG&E/Higgins); Ex. 5, Attachment W015 (Notification of Abnormal or Emergency Operating Conditions, Rev. 1, Gas Operations JSSA & Tailboard Briefing) (incorporating Gas Carrier Pipe Checklist).

²⁸ SED Application at 8 (*citing* Ex. 32 (Internal Auditing Memo Re: Audit of Gas Damage Prevention Program (Feb. 10, 2012))).

²⁹ Ex. 32 at 7 (Internal Auditing Memo Re: Audit of Gas Damage Prevention Program (Feb. 10, 2012)); *see* 1/20/16 Tr. at 275:5 to 276:10 (PG&E/Higgins); Ex. 4 at 3-13:13 to 3-14:8, 3-15:7-20 (PG&E Reply Testimony, Higgins).

³⁰ SED Application at 7–8 (*citing* D.16-08-020 at 25).

³¹ D.16-08-020 at 25.

³² *See, e.g., id.* at 42, 48, 50.

complementary measures to enhance the safety of its gas distribution system. To that end, PG&E has already agreed to act on a number of the recommendations for recordkeeping improvements that were raised in this proceeding, and continues to look for opportunities to improve further, consistent with its vision to provide the safest and most reliable gas utility service in the United States.

V. THE USE OF DECEMBER 31, 2011 AS THE END DATE FOR THE PENALTY RELATED TO THE DE ANZA RECORDS WAS NOT LEGAL ERROR.

SED has claimed that PG&E violated multiple regulations by misplacing the paper copies of the 1979–1991 leak repair records for the De Anza Division. Although PG&E demonstrated that the missing paper records are preserved in an electronic database, and so the fact that the paper records are missing does not interfere with PG&E’s ability to operate its system safely,³³ the Commission nonetheless fined PG&E \$12.052 million for not “promptly and comprehensively” assessing the consequences of these missing records after discovering they were missing.³⁴ This amount was based on the Commission’s calculation of a continuing violation beginning on January 1, 1979, the earliest possible date of the missing records, and ending December 31, 2011, when PG&E “appears to have realized the records were missing.”³⁵ SED claims that the use of December 31, 2011 as the end date for this violation constitutes legal error on two bases, both of which were previously raised on appeal and rejected by the Commission.³⁶

³³ D.16-08-020 at 34; 1/21/16 Tr. at 437:23 to 439:17 (PG&E/Trevino); *id.* at 485:1-25 (PG&E/Singh); Ex. 4 at 6-6:29-32 (PG&E Reply Testimony, Thierry); Ex. 33 (PG&E’s Supplemental Response No. 1 to SED Data Request No. 25).

³⁴ D.16-08-020 at 38.

³⁵ *Id.* at 37.

³⁶ SED Application at 9–10; SED Appeal at 11–14.

SED argues that an end date in 2011 is inappropriate based on its assertion that PG&E's continuing violation did not end until later.³⁷ SED then references the portion of its appeal where it proposed alternative dates.³⁸ As PG&E explained in its response to SED's appeal, those alternative dates are inconsistent with the Commission's reasoning about the basis for the violation and would penalize PG&E for alleged misconduct that the Commission did not find occurred.³⁹ SED's other complaint is that, at different points in the Decision, both January 1, 2011 and December 31, 2011 are referred to as the end date for this violation.⁴⁰ In the summary table where the penalty is calculated, the Decision uses the later date, resulting in a higher fine, which SED does not claim was in error.⁴¹ The discrepancy is therefore merely a typographical error, not a legal one justifying a rehearing.

Because SED has not identified any legal error in the Decision's use of December 31, 2011 as the end date for this violation, this issue raised in its Application should be rejected as well.

VI. THE TYPOGRAPHICAL ERROR IN THE DECISION'S PENALTY CALCULATION FOR THE FRESNO INCIDENT IS NOT LEGAL ERROR.

In its Decision, the Commission imposed \$100,000 in penalties for an incident in Fresno in 2014.⁴² As the Decision explains, this is the total penalty for two violations at \$50,000 each, the maximum amount permitted for a violation at the time of that incident.⁴³ The chart where that penalty is identified, however, mistakenly states directly below the \$100,000 total that the

³⁷ *Id.* at 9-10.

³⁸ *Id.* at 10 (*citing* SED Appeal at 11-16).

³⁹ Appendix (PG&E Response to Appeals) at 33-34.

⁴⁰ SED Application at 9.

⁴¹ D.16-08-020 at 38; SED Application at 9.

⁴² D. 16-08-020 at 52-53.

⁴³ *Id.* at 49, 52.

two violations are being assessed at \$20,000 each.⁴⁴ Because the total penalty is correct, this is a purely “typographical error,” as SED describes it, with no impact on the substance of the Decision.⁴⁵ Therefore, it also does not constitute legal error.

VII. CONCLUSION

For the foregoing reasons, PG&E respectfully requests that SED’s Rehearing Application be denied.

Respectfully submitted,

/s/ Elizabeth Collier

LISE H. JORDAN
ELIZABETH COLLIER
Pacific Gas and Electric Company
Law Department
77 Beale Street
San Francisco, CA 94105
Telephone: (415) 973-6965
Facsimile: (415) 973-0516
Email: lhj2@pge.com
Email: eacp@pge.com

/s/ Marie L. Fiala

MARIE L. FIALA
JOSHUA HILL
Sidley Austin LLP
555 California Street
San Francisco, CA 94104
Telephone: (415) 772-1200
Facsimile: (415) 772-2400
Email: mfiala@sidley.com
Email: jhill@sidley.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

Dated: October 11, 2016

⁴⁴ *Id.* at 52.

⁴⁵ SED Application at 10.

APPENDIX

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Investigation And Order to Show Cause on the Commission's Own Motion into the Operations and Practices of Pacific Gas and Electric Company with Respect to Facilities Records for its Natural Gas Distribution System Pipelines.

I.14-11-008
(Filed November 20, 2014)

**PACIFIC GAS AND ELECTRIC COMPANY'S
RESPONSE PURSUANT TO RULE 14.4(D) OF THE CALIFORNIA PUBLIC
UTILITIES COMMISSION RULES OF PRACTICE AND PROCEDURE TO THE
APPEALS OF THE SAFETY AND ENFORCEMENT
DIVISION AND CITY OF CARMEL-BY-THE-SEA**

LISE H. JORDAN
ELIZABETH COLLIER
Law Department
Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105
Telephone: (415) 973-6965
Facsimile: (415) 973-0516
Email: lhj2@pge.com
Email: eacp@pge.com

MARIE L. FIALA
JOSHUA HILL
Sidley Austin LLP
555 California Street
San Francisco, CA 94104
Telephone: (415) 772-1200
Facsimile: (415) 772-2400
Email: mfiala@sidley.com
Email: jhill@sidley.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

Dated: July 18, 2016

TABLE OF CONTENTS

	Page
I. Introduction.....	1
II. The Issues Raised by the OII Were Thoroughly Investigated and Resulted in an Extensive and Largely Undisputed Evidentiary Record.....	4
III. The Record Reflects That PG&E Has Implemented Numerous Corrective Actions to Improve the Quality and Management of Its Gas Distribution Records and Promote Safety.....	5
A. PG&E Has Adopted Innovative Technologies That Have Improved the Accuracy, Accessibility, and Processing of Its Gas Distribution Records.....	6
B. PG&E’s Gas Distribution Control Center and Corrective Action Program Allow PG&E to Monitor Its Distribution System for Issues Affecting Safety.....	7
C. PG&E Is Pioneering New Approaches to the Way Gas Operations Works.....	8
D. PG&E Is Proactively Addressing Risks to Its System as They Are Identified.....	9
E. PG&E Has Enhanced Its Recordkeeping Processes, Procedures, and Training....	10
F. Expert Third Parties Have Validated the Quality of PG&E’s Efforts.....	11
IV. Objective Industry Metrics Support the POD’S Conclusion That PG&E’s Gas Distribution System generally complies with laws and regulations.....	12
A. Anecdotal Evidence of Imperfections in PG&E’s Gas Distribution System Do Not Undermine the Conclusion That the System Is Operating Safely Overall.	14
B. There Is No Evidence That PG&E’s Excavation Damage Metrics Are “Misleading.”	18
C. SED and Carmel Mischaracterize the Conclusions Reached in the POD.	20
1. The POD Did Not Assert That a 99.98% Accuracy Rate Is “Acceptable.”	20
2. The POD Did Not Conclude That a 99.98% Accuracy Rate Eliminates the Need for Further Improvement.	20
V. The Penalty Assessment	21
A. The Total Fine of \$24.31 Million, in Addition to the \$10.8 Million Levied for the Carmel Citation, Is Consistent With the Traditional Factors Considered by the Commission in Setting Fines.	23
B. Penalties Imposed for Specific Violations.....	26
1. The Incidents Do Not Demonstrate a Systemic Issue.....	26
2. SED’s and Carmel’s Proposed Alternative Penalties Ignore the Necessary Fact-Specific Inquiry for Each Incident and Are Based on Mistaken Premises.	27

3.	The Cumulative \$21.6 Million Fine for the Carmel Incident Is Substantial.....	29
4.	A Higher Fine for the Milpitas I Incident Would Not Be Proportional.....	30
5.	The Alameda, Alamo, Antioch, Lafayette, San Francisco, and San Jose I Incidents Do Not Warrant Penalties.....	31
C.	The Penalty for the Missing De Anza Records.....	32
D.	There Was No Violation in Connection with PG&E’s Method for Setting Maximum Allowable Operating Pressure.....	34
VI.	Carmel’s Procedural Challenges Should Be Rejected.....	37
VII.	Conclusion	39
VIII.	Appendices	
A.	PG&E’s Measures to Continue to Improve Gas Distribution Recordkeeping and Promote Safety	
B.	PG&E’s Responses to Proposed Remedial Measures	

TABLE OF AUTHORITIES

	Page(s)
CASES	
<i>S. Cal. Edison Co. v. Pub. Utils. Comm'n</i> , 140 Cal. App. 4th 1085 (2006)	31
STATUTES	
Cal. Gov't Code § 4216.3(a)(1)	31
Cal. Pub. Util. Code § 451	30, 32
Cal. Pub. Util. Code § 2104.5	20, 23
Cal. Pub. Util. Code § 2107	22
Cal. Pub. Util. Code § 2108	27
REGULATIONS	
49 C.F.R. § 192.603(b)	32
49 C.F.R. § 192.605(a).....	32
49 C.F.R. § 192.605(b)(3).....	30, 32
49 C.F.R. § 192.614(c)(5).....	31
49 C.F.R. § 192.619	35, 37
49 C.F.R. § 192.619(c).....	34, 37
49 C.F.R. § 192.723(b)(2).....	24
49 C.F.R. § 192.727(b)	31
49 C.F.R. pts. 190-193	38
49 C.F.R. pt. 199	38
COMMISSION RULES	
Cal. Pub. Utils. Comm'n, Rules of Practice & Procedure, Rule 7.3(a)	31
Cal. Pub. Utils. Comm'n, Rules of Practice & Procedure, Rule 14.4(d).....	1

COMMISSION DECISIONS AND RESOLUTIONS

Greenlining Inst., Latino Issues Forum v. Pac. Bell,
D. 01-04-037, 2001 Cal. PUC LEXIS 38422

Investigation of Commc 'ns Telesystems Int'l,
D. 97-10-063, 1997 Cal. PUC LEXIS 91222

Investigation of Pac. Bell Wireless,
D. 04-09-062, 2004 Cal. PUC LEXIS 45322

Investigation of Qwest Commc 'ns Corp.,
D. 03-01-087, 2003 Cal. PUC LEXIS 6722

Investigation of TracFone Wireless, Inc.,
D. 15-05-032, 2014 Cal. PUC LEXIS 70022

Investigation on the Comm'n's Own Motion into the Operations & Practices of S. Cal. Edison Co., et al. Regarding the Util. Facilities & the Canyon Fire in Malibu of Oct. 2007,
D. 13-09-028, 2013 Cal. PUC LEXIS 51425

Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co., Regarding the Gas Explosion & Fire on Dec. 24, 2008 in Rancho Cordova, Cal.,
D. 11-11-001, 2011 Cal. PUC LEXIS 50925, 29

Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. to Determine Violations of Pub. Util. Code § 451, Gen. Order 112, & Other Applicable Standards, Laws, Rules & Regulations in Connection with the San Bruno Explosion & Fire on Sept. 9, 2010,
D. 15-04-024, 2015 Cal. PUC LEXIS 23028

Order Instituting Investigation Into S. Cal. Edison Co.'s Elec. Line Constr., Operation, & Maint. Practices,
D. 04-04-065, 2004 Cal. PUC LEXIS 20728

Order Instituting Rulemaking on the Comm'n's Own Motion to Adopt New Safety & Reliability Regulations for Nat. Gas Transmission & Distribution Pipelines & Related Rulemaking Mechanisims,
D. 12-12-030, 2012 Cal. PUC LEXIS 60037

Re Standards of Conduct Governing Relationships Between Energy Utils. & Their Affiliates,
D. 98-12-075, 1998 Cal. PUC LEXIS 1018 passim

Resolution ALJ-274, <i>Establishes Citation Procedures for the Enf't of Safety Regulations by the Consumer Prot. & Safety Div. Staff for Violations by Gas Corps. of Gen. Order 112-E & Code of Fed. Regulations, Title 49, Parts 190, 191, 192, 193, & 199,</i> 2011 WL 6278266 Cal. P.U.C.....	38
Resolution ALJ-277, <i>Affirming Citation No. ALJ-274 2012-01-001 Issued to Pac. Gas & Elec. Co. for Violations of Gen. Order 112-E,</i> 2012 Cal. PUC LEXIS 629.....	23, 24, 25
Resolution ALJ-323, <i>Resolves the Appeal of Pac. Gas & Elec. Co. from Citation ALJ-274 2014-11-001 Issued by the Safety & Enf't Div.,</i> 2015 Cal. PUC LEXIS 757.....	24
OTHER AUTHORITIES	
Pipeline & Hazardous Materials Safety Admin., <i>Distribution Integrity Management Frequently Asked Questions</i>	18
Pipeline & Hazardous Materials Safety Admin., <i>Annual Report Mileage for Gas Distribution Systems</i>	19
Pipeline & Hazardous Materials Safety Admin., <i>Significant Incidents</i>	19
Pipeline & Hazardous Materials Safety Admin., et al. <i>Integrity Management for Gas Distribution Report of Phase 1 Investigations (Dec. 2005)</i>	18

I. INTRODUCTION

Pursuant to Rule 14.4(d) of the California Public Utilities Commission (Commission) Rules of Practice and Procedure, Pacific Gas and Electric Company (PG&E) hereby submits this joint response to the Appeals of the Presiding Officer's Decision (POD)¹ filed by the Safety and Enforcement Division and the City of Carmel-by-the-Sea.

The Commission issued the Order Instituting Investigation and Order to Show Cause (OII)² to investigate whether PG&E violated any applicable laws, regulations, or rules by its "recordkeeping policies and practices with respect to maintaining safe operation of its gas distribution system."³ PG&E agrees that this is an important question, and appreciates the opportunity provided by this proceeding to respond to the concerns raised in the OII and explain the initiatives it has undertaken to improve its recordkeeping and enhance the safety of its operations. PG&E acknowledges that it does not have perfect records—indeed, as was established in this proceeding, and as SED's own experts agreed, it is doubtful that any pipeline operator does.⁴ PG&E also acknowledges that, particularly as related to the Mountain View and Carmel incidents, it did not meet the expectations that PG&E sets for itself when it comes to safety and risk mitigation. It regrets the incidents and the resulting property damage and inconvenience to the public. However, PG&E respectfully disagrees that the occurrence over a

¹ Presiding Officer's Decision on Order Instituting Investigation and Order to Show Cause on the Commission's Own Motion into the Operations and Practices of Pacific Gas and Electric Company with respect to Facilities Records for its Natural Gas Distribution System Pipelines (POD). PG&E has not appealed from the POD.

² Order Instituting Investigation and Order to Show Cause, I. 14-11-008 (Nov. 20, 2014) (OII).

³ Assigned Commissioner's Scoping Memo and Ruling, I. 14-11-008 (Apr. 10, 2015) (Scoping Memo) at 3; *see also* OII at 1.

⁴ POD at 8; PG&E Opening Brief (OB) at 38-39; 1/19/16 Tr. at 44:5-15 (SED/PWA) (PWA stating that it "[does not] know a pipeline operator who has perfect maps and records" and that it "seriously doubt[s] that there is . . . a pipeline operator that is in full compliance [with the applicable regulations]"); Ex. 16 at 5 (SED's Consolidated Response to Dec. 22, 2015 Meet and Confer Demands & Dec. 1, 2015 Data Requests) ("PWA consultants are not aware of utility companies whose maps and records contain no inaccuracies.").

six-year period of the 19 incidents that were reviewed in this proceeding means that its gas distribution system is unsafe, especially when that system spans 42,000 miles of mains and 3.3 million services over its 72,000 square-mile service territory, documented by nearly 15,000 linear feet of records. The evidence, which was largely undisputed, established that PG&E has worked continuously to identify and implement robust measures to improve the quality of its recordkeeping and reduce the risks resulting from imperfect records, including risks associated with unmapped plastic inserts. PG&E's adoption of these industry leading practices is corroborated by independent assessments, including SED's own experts in this proceeding, as well as objective measures of PG&E's safety performance based on data compiled by the Pipeline and Hazardous Materials Safety Administration (PHMSA).⁵ There is more to be done. However, as SED's experts, P Wood Associates (PWA), confirmed, change is "well underway" at PG&E.⁶

As explained in its post-hearing briefs, PG&E does not believe a fine of the magnitude proposed is warranted or necessary to deter future conduct.⁷ PG&E nevertheless chose not to appeal from the POD because it believes that the public interest would be best served if PG&E, SED, and the Intervenors moved forward cooperatively to address the concerns expressed by the OII. PG&E has already agreed to act on many of SED's recommendations for recordkeeping improvements and looks forward to meeting with SED and the Intervenors regarding opportunities to improve further.

This joint Response to the Appeals filed by SED and Carmel is organized as follows:

⁵ PG&E OB at 28-29.

⁶ Ex. 1 at 10 (PWA Report); *see* PG&E OB at 41; Ex. 2 at 43-44 tbl.2 (PWA Rebuttal) (acknowledging that "PG&E's current efforts to improve its operation are extensive, and in many cases appear to represent best or innovative practices").

⁷ So far as permissible, PG&E suggests that any fines ordered should be invested in gas system safety.

First, PG&E provides an overview of the numerous corrective actions it has implemented in recent years to improve its gas distribution recordkeeping and the safety of its system overall. These facts comprise a significant part of the evidence in the record, which is not described in the POD or the appeal briefs.

Second, PG&E describes the objective data compiled by PHMSA indicating that PG&E operates its system safely compared to other gas distribution operators nationally, and responds to SED's and Carmel's claims that isolated examples of records imperfections undermine this measure of PG&E's overall performance.

Third, PG&E explains why SED's and Carmel's proposals for calculating higher fines for specific incidents, including the Carmel incident, are inappropriate. SED's and Carmel's alternative proposals largely involve a mechanical application of fines at the top of the statutory range, while giving no consideration to the fact-specific criteria that must be considered under the Public Utilities Code and Commission precedent when determining an appropriate penalty. PG&E submits that the decision in this proceeding should consider the evidence of record and the relevant criteria for assessing a penalty—including factually comparable precedents, the relative severity of the incidents, PG&E's commitment to continuous improvement, and the objective measures demonstrating PG&E's general compliance with regulations.⁸

Fourth, PG&E explains how SED and Carmel misconstrue the evidentiary record and the POD's findings in challenging the fine imposed regarding the De Anza leak repair records.

Fifth, PG&E refutes SED's claim that PG&E previously admitted that its method for setting maximum allowable operating pressure for certain distribution systems is a violation.

⁸ PG&E agrees with SED that the fine proposed by the POD at page 55 does not include the \$50,000 penalty imposed for the POD's finding that PG&E's communication with city officials in Carmel was inadequate. POD at 42; SED Appellate Brief (AB) at 3 n.10. PG&E also supports keeping the proceeding open so that the Presiding Officer may assess the compliance plan for remedial measures produced through the ordered meet-and-confer process. POD at 53-54; Carmel AB at 11-12.

Last, PG&E responds to the procedural challenges to the POD raised by Carmel.

For all of these reasons, PG&E respectfully disagrees with SED and Carmel that additional penalties are warranted.

II. THE ISSUES RAISED BY THE OII WERE THOROUGHLY INVESTIGATED AND RESULTED IN AN EXTENSIVE AND LARGELY UNDISPUTED EVIDENTIARY RECORD.

Citing six incidents that occurred in the last six years, the Commission instituted this OII to determine “whether PG&E’s recordkeeping practices for its gas distribution system have been unsafe and in violation of the law.”⁹ The questions raised in the OII were thoroughly investigated over the course of nearly 18 months. During discovery, PG&E produced tens of thousands of pages of documents in response to over 100 data requests, responded to written interrogatories under oath, and arranged interviews and site visits for SED and its experts with PG&E managers and field employees.¹⁰ The parties submitted more than 400 pages of written testimony from eight fact witnesses and five experts on gas distribution recordkeeping, plus over 2,500 pages of attachments.¹¹ SED’s testimony included two reports authored by its experts, PWA, who commented at length on 19 incidents they identified and positively assessed PG&E’s progress in implementing industry leading or best practices.¹² In PG&E’s testimony, six executives addressed the incidents and provided detailed explanations of the technology initiatives, records and information management practices, and corrective actions PG&E has implemented since 2010 to improve recordkeeping and operational safety.¹³ PG&E’s experts,

⁹ OII at 1.

¹⁰ Ex. 1 at 6 (PWA Report); Ex. 4 at 1-2:25-30 (PG&E Reply Testimony, Howe).

¹¹ Ex. 1 (PWA Report); Ex. 2 (PWA Rebuttal); Ex. 3 (TURN Testimony); Ex. 4 (PG&E Reply Testimony); Exs. 5-10 (PG&E Reply Testimony Supporting Attachments); Ex. 43 (Carmel Testimony, Calhoun); Ex. 44 (Carmel Testimony, Burnett).

¹² Ex. 1 (PWA Report); Ex. 2 (PWA Rebuttal).

¹³ Ex. 4 at Chs. 1-6 (PG&E Reply Testimony).

including the former Director of Regulations and Technical Standards at PHMSA’s Office of Pipeline Safety, opined on PG&E’s regulatory compliance and performance compared to gas distribution pipeline operators nationally.¹⁴ After four days of hearings, the parties submitted two rounds of post-hearing briefs, which, taken together, exceeded 500 pages, including appendices addressing each of SED’s alleged violations.¹⁵ In the end, the facts were almost entirely undisputed, and the parties differed mostly as to the conclusions that should be drawn on that record.

III. THE RECORD REFLECTS THAT PG&E HAS IMPLEMENTED NUMEROUS CORRECTIVE ACTIONS TO IMPROVE THE QUALITY AND MANAGEMENT OF ITS GAS DISTRIBUTION RECORDS AND PROMOTE SAFETY.

A significant portion of the testimony and evidence in this proceeding described PG&E’s extensive efforts to improve its gas distribution recordkeeping practices, reduce risk, and enhance the safety of its operations. While these facts are not discussed at length in the POD,¹⁶ they provide critical context for the Commission’s review.

Before the Commission issued this OII, PG&E had already undertaken numerous initiatives to improve its gas distribution recordkeeping and mitigate the risks created by imperfect records,¹⁷ including the risk that incidents, such as those at issue in this proceeding, might occur again. PWA evaluated these measures and found that they meet—and in many cases exceed—industry best practices.¹⁸ According to PWA, nine of the 24 measures PG&E has adopted are “industry best practices” that “produce superior safety results” beyond those required

¹⁴ *Id.* at Ch. 7 (PG&E Reply Testimony, Huriaux); *id.* at Ch. 8 (PG&E Reply Testimony, Paskett).

¹⁵ PG&E OB; SED OB; Carmel OB; PG&E Reply Brief (RB); SED RB; Carmel RB.

¹⁶ *See* POD at 17.

¹⁷ *See infra* Appendix A; PG&E OB at 17-30.

¹⁸ 1/19/16 Tr. at 27:15-28, 30:4-14, 31:13 to 33:13 (SED/PWA); Ex. 1 at 59-67 tbl.9 (PWA Report).

by safety regulations.¹⁹ An additional eight measures, according to PWA, are “innovative practices,” extending a “step beyond” industry best practices.²⁰ The table attached as Appendix A summarizes more than 40 measures that PG&E has undertaken to improve the quality and management of its gas distribution records and promote safety.²¹

A. PG&E Has Adopted Innovative Technologies That Have Improved the Accuracy, Accessibility, and Processing of Its Gas Distribution Records.

PG&E is improving the quality of its records by investing in and implementing new technologies. The cornerstone of this effort is the Pathfinder Project, which consolidates multiple sources of gas distribution asset data, much of it previously stored in paper form, into a single electronic mapping system, called GD GIS.²² This system stitches together tens of thousands of individual plat maps into one continuous electronic map, with links to various location-specific asset records.²³ PG&E has scanned millions of Gas Service Records (GSRs), which are created whenever PG&E installs, replaces, or modifies a gas distribution service line, and linked them to the related service line on the GD GIS map, making the underlying asset data available by clicking on the map.²⁴ This technology also allows PG&E to improve the accuracy of the underlying data by using analytical tools to identify inconsistencies or inaccuracies.²⁵

¹⁹ *Id.*

²⁰ *Id.*

²¹ Where the current status of PG&E’s implementation of various technological enhancements and corrective actions is described in this submission, it refers to the status as of the close of the evidentiary record in this matter.

²² PG&E OB at 18-19; Ex. 4 at 1-12:23 to 1-13:21 (PG&E Reply Testimony, Howe); *id.* at 2-10:9 to 2-19:23, 5-13:17-23 (PG&E Reply Testimony, Singh); *see also* Ex. 1 at 55:30-36 (PWA Report) (explaining that PWA anticipates that the Pathfinder Project will correct many inaccurate records).

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

PWA recognizes GD GIS as an “innovative practice[]” that goes a step beyond the “best practices” in the gas industry.²⁶

With an integrated electronic system, PG&E is now also able to improve the accuracy of its asset data by cross-checking its various datasets against each other.²⁷ For example, when conducting a leak repair, PG&E crews record the size, type, and location of the underground assets.²⁸ PG&E uses these observations to verify the mapping information in GD GIS.²⁹

A further advantage of electronic recordkeeping is that GD GIS and other records can be made accessible to PG&E employees and contractors working in the field via mobile tablets and laptops.³⁰ These mobile tools also enable field personnel to create and submit electronic information, such as mapping corrections or leak repair forms, in near real time as they perform their work, allowing for faster and more accurate updating of PG&E’s records.³¹

B. PG&E’s Gas Distribution Control Center and Corrective Action Program Allow PG&E to Monitor Its Distribution System for Issues Affecting Safety.

PG&E’s Gas Distribution Control Center (GDCC), which PWA identified as an industry “best practice,” went live in 2013.³² The GDCC serves as PG&E’s around-the-clock nerve

²⁶ 1/19/16 Tr. at 31:13 to 33:12 (SED/PWA); Ex. 1 at 59 tbl.9 (PWA Report).

²⁷ Ex. 4 at 2-18:26 to 2-21:3 (PG&E Reply Testimony, Singh).

²⁸ *Id.*; *id.* at 3-6:27 to 3-7:21 (PG&E Reply Testimony, Higgins).

²⁹ *Id.* at 2-20:3-13 (PG&E Reply Testimony, Singh); *id.* at 3-6:27 to 3-7:21 (PG&E Reply Testimony, Higgins); *id.* at 4-15:16 to 4-16:17 (PG&E Reply Testimony, Trevino); *see also* Ex. 1 at 61 tbl.9 (PWA Report) (acknowledging this measure as an “innovative practice”).

³⁰ PG&E OB at 20-21; Ex. 4 at 2-15:24 to 2-16:17, 2-20:14-18, 2-22:10-26, 5-36:10 to 5-37:2 (PG&E Reply Testimony, Singh); *id.* at 3-12:11 to 3-13:12 (PG&E Reply Testimony, Higgins); *see also* Ex. 1 at 62 tbl.9 (PWA Report) (recognizing that providing crews with mobile access is a “best practice”).

³¹ *Id.* PG&E’s electronic systems can also automatically monitor workflow, for instance by tracking the speed with which maps are updated following installation work. Ex. 4 at 4-11:29 to 4-12:28 (PG&E Reply Testimony, Trevino). In part due to this enhanced monitoring capability, the time for updating maps with the results of capital job orders improved from about 75 days on average in 2011 to fewer than 30 days on average in 2014. *Id.*

³² PG&E OB at 21-22; Ex. 1 at 66 tbl.9 (PWA Report); Ex. 4 at 5-2:11 to 5-3:23 (PG&E Reply Testimony, Singh).

center, monitoring all aspects of its gas system.³³ With hundreds of electronic monitors constantly tracking the flow of gas throughout PG&E's system, GDCC staff can learn about operating conditions that require attention in real time and coordinate PG&E's response.³⁴ The staff also oversees the Gas Distribution Clearance Process, a centralized review of all work that will affect the flow of gas in PG&E's distribution mains.³⁵

PG&E has also created the Corrective Action Program (CAP), which PWA also describes as an "innovative practice."³⁶ CAP is a real-time repository of issues reported on PG&E's gas system, ranging from a dig-in to a suggestion for improving a work process.³⁷ Mapping corrections are submitted and tracked through CAP.³⁸ A designated team systematically reviews these inputs, allowing PG&E to prioritize the most urgent items, monitor issues to resolution, and trend recurring issues and analyze their causes and consequences.³⁹

C. PG&E Is Pioneering New Approaches to the Way Gas Operations Works.

PG&E has adopted creative new approaches and technologies that allow leak surveillance, construction, and maintenance work to be performed more efficiently and effectively. In the leak detection and repair process called "Super Crew," the leak management personnel work together in a single, coordinated process with the state-of-the-art Picarro Surveyor™ leak detection device to find gas leaks.⁴⁰ The Picarro Surveyor™ is approximately

³³ *Id.*

³⁴ *Id.*

³⁵ Ex. 4 at 5-4:10 to 5-5:14 (PG&E Reply Testimony, Singh)

³⁶ PG&E OB at 22-24; Ex. 1 at 63 tbl.9 (PWA Report); Ex. 4 at 4-5:22 to 4-6:15 (PG&E Reply Testimony, Trevino); *id.* at 5-22:24 to 5-27:22 (PG&E Reply Testimony, Singh).

³⁷ PG&E employees can make a CAP report using a paper form, an email, a toll-free number, the PG&E website, or a Smartphone app. Ex. 4 at 5-22:22-28 (PG&E Reply Testimony, Singh).

³⁸ Ex. 1 at 63 tbl.9 (PWA Report); Ex. 4 at 4-5:22 to 4-6:15 (PG&E Reply Testimony, Trevino); *id.* at 5-22:22 to 5-27:22 (PG&E Reply Testimony, Singh).

³⁹ Ex. 4 at 4-11:29 to 4-12:28 (PG&E Reply Testimony, Trevino).

⁴⁰ PG&E OB at 24; Ex. 4 at 3-5:25 to 3-7:21 (PG&E Reply Testimony, Higgins).

1,000 times more sensitive to natural gas detection than other commercially available leak detection instruments.⁴¹ It does not depend on maps to find leaks and can discover leaks even in places where records might not necessarily reflect assets.⁴² The Super Crew then targets the neighborhood scanned by the Picarro Surveyor™ to repair the required discovered leaks all at one time.⁴³ As determined during the pilot phase, this process identifies up to 80% more leaks than traditional methods and repairs leaks about 40% faster.⁴⁴ Every time a leak is fixed, updated asset information is recorded and becomes viewable in GD GIS, thereby continuously improving records accessibility and accuracy.⁴⁵

D. PG&E Is Proactively Addressing Risks to Its System as They Are Identified.

After the Carmel incident, PG&E identified and implemented a set of robust corrective actions to address the potential risks posed by unmapped plastic inserts.⁴⁶ PG&E adopted the Gas Carrier Pipe Checklist, a series of formal steps that every crew follows to search for any sign of an inserted plastic pipe before welding or tapping.⁴⁷ PWA agrees that the Checklist appears to be an “effective” backstop measure.⁴⁸ In the event a crew is unable to conclusively rule out the possibility of an inserted line, PG&E has also introduced the Bolt-On Saddle Punch Tee, a tap fitting designed to prevent plastic inserts from being melted or breached during the welding and

⁴¹ *Id.*

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ PG&E OB at 54; Ex. 36 (Letter from S. Singh to M. Robertson (Apr. 4, 2014)).

⁴⁷ Ex. 5, Attachment W015 (Notification of Abnormal or Emergency Operating Conditions, Rev. 1, Gas Operations JSSA & Tailboard Briefing) (incorporating Gas Carrier Pipe Checklist); *see* Ex. 4 at 3-28:14 to 3-29:13 (PG&E Reply Testimony, Higgins); *id.* at 5-8:21 to 5-9:10 (PG&E Reply Testimony, Singh).

⁴⁸ Ex. 1 at 65 tbl.9 (PWA Report).

tapping process.⁴⁹ PWA describes the Tee as a “very useful” backstop measure for unmapped inserts.⁵⁰

PG&E has also launched an effort to specifically compare its leak repair records with information in GD GIS to confirm the mapping of plastic inserts.⁵¹ By making this comparison, PG&E can identify any instances where plastic inserts were used as the repair method, but do not appear on the GD GIS maps.⁵² PG&E is also collaborating with a technology company to research new tools for detecting plastic pipe in steel lines, such as by analyzing sound wave patterns.⁵³ These initiatives should continue to reduce the potential risk of incidents, such as those in Carmel and Mountain View, related to unmapped plastic inserts.

E. PG&E Has Enhanced Its Recordkeeping Processes, Procedures, and Training.

In 2011, Gas Operations established a Quality Management (QM) group that reviews a variety of work activities and individual records to verify that employees are adhering to PG&E’s procedures and to identify areas for improvement,⁵⁴ a measure that PWA described as an industry “best practice.”⁵⁵ The QM group has conducted quality assurance reviews of over 25,000 records for gas distribution operations and maintenance activities, which have prompted modifications to records-related processes and trainings.⁵⁶ In 2014, the last full year for which metrics were available in the record, 98% of the Gas Operations workforce received records and

⁴⁹ Ex. 4 at 5-10:12-16 (PG&E Reply Testimony, Singh).

⁵⁰ Ex. 1 at 68:1-16 (PWA Report).

⁵¹ PG&E OB at 18-20; Ex. 4 at 2-20:3-13 (PG&E Reply Testimony, Singh); *id.* at 4-15:16 to 4-16:17 (PG&E Reply Testimony, Trevino).

⁵² PG&E OB at 56; Ex. 4 at 4-15:16 to 4-16:17 (PG&E Reply Testimony, Trevino).

⁵³ Ex. 4 at 5-11:25 to 5-12:13 (PG&E Reply Testimony, Singh).

⁵⁴ PG&E OB at 26-27; Ex. 4 at 5-32:6 to 5-33:30 (PG&E Reply Testimony, Singh).

⁵⁵ Ex. 1 at 64-65 tbl.9 (PWA Report).

⁵⁶ Ex. 4 at 3-16:31 to 3-17:22 (PG&E Reply Testimony, Higgins); *id.* at 5-33:12-30 (PG&E Reply Testimony, Singh).

information management training.⁵⁷ PG&E has also introduced an enhanced training and development program for all new and existing mappers, and is in the process of creating a revised mapping procedures manual.⁵⁸ Together with PG&E's new electronic means for tracking workflow, these improvements have also significantly increased the speed with which PG&E's maps are updated.⁵⁹

F. Expert Third Parties Have Validated the Quality of PG&E's Efforts.

PG&E's commitment to continuous improvement in records management and safety practices is based on standards published by industry organizations to guide operational improvements inside and outside of the gas industry. PG&E's compliance with those standards has been validated by independent third-party auditors.⁶⁰

PG&E has aligned its records and information management program with two international standards for asset management, Publicly Available Specification (PAS) 55 and International Organization for Standardization (ISO) 55001.⁶¹ Lloyd's Register, a recognized third-party accreditation firm, conducted a multi-phase audit of PG&E's implementation of these standards and awarded PG&E best practice asset management certifications under both standards, making it the first operator in North America with both certifications.⁶² PWA assessed PG&E's achievement of these certifications as an "innovative practice."⁶³ PG&E has also been an industry leader in implementing the American Petroleum Institute's (API) Recommended Practice 1173, developed in conjunction with PHMSA and other gas operators,

⁵⁷ *Id.* at 2-6:15 to 2-7:25 (PG&E Reply Testimony, Singh).

⁵⁸ *Id.* at 4-8:23 to 4-9:2, 4-10:13 to 4-12:28 (PG&E Reply Testimony, Trevino).

⁵⁹ *Id.*

⁶⁰ PG&E OB at 28-29; Ex. 4 at 1-21:5 to 1-22:19 (PG&E Reply Testimony, Howe).

⁶¹ Ex. 4 at 1-21:5-31 (PG&E Reply Testimony, Howe).

⁶² *Id.* at 1-21:32 to 1-22:19 (PG&E Reply Testimony, Howe); *id.* at 2-7:28 to 2-8:25 (PG&E Reply Testimony, Singh).

⁶³ Ex. 1 at 64 tbl.9 (PWA Report).

which provides a framework to pipeline operators for developing and maintaining a safety management system.⁶⁴ PG&E obtained a letter of compliance with API 1173 in 2015, one of the first pipeline operators in the nation to do so.⁶⁵ These independent assessments provide objective validation of PG&E's commitment to improving the quality of its recordkeeping and the safety of its system overall.

IV. OBJECTIVE INDUSTRY METRICS SUPPORT THE POD'S CONCLUSION THAT PG&E'S GAS DISTRIBUTION SYSTEM GENERALLY COMPLIES WITH LAWS AND REGULATIONS.

Any decision regarding fines assessed in this proceeding should consider whether PG&E's gas distribution recordkeeping is, as the POD stated, generally in compliance with the regulations—that is, operating safely overall.⁶⁶ As explained below, the gas industry uses locate and mark data as a proxy for the health of a company's asset records and safety performance. It is undisputed that, as the POD said, PG&E has “an accuracy rate for locating and marking its facilities that is well over 99%.”⁶⁷ It is important to the Commission's evaluation of the ordered fines—and SED's and Carmel's challenges to them—to understand the evidentiary basis for the POD's conclusion.

Excavation damage has long been recognized by the industry as the most significant threat to distribution pipeline safety.⁶⁸ Significantly, SED agreed with PG&E's experts that an operator's ability to avoid excavation damage is the key indicator not just of system safety

⁶⁴ 1/19/16 Tr. at 36:26 to 37:6 (SED/PWA); Ex. 4 at 1-18:10 to 1-19:15 (PG&E Reply Testimony, Howe).

⁶⁵ *Id.*; 1/20/16 Tr. at 183:22 to 184:13 (PG&E/Howe); Ex. 12 (Lloyd's Register Pipeline Safety Management System Certificate of Compliance with API RP 1173: 2015 (Nov. 30, 2015)).

⁶⁶ POD at 45.

⁶⁷ *Id.*; *see also* PG&E OB at 10; Ex. 4 at 3-40:21-23 (PG&E Reply Testimony, Higgins).

⁶⁸ PG&E OB at 11-12; Ex. 4 at 8-16 (PG&E Reply Testimony, Paskett).

generally, but also of the accuracy and completeness of its maps and records.⁶⁹ PG&E closely tracks the frequency of excavation damage on its system, as well as “at-fault dig-ins,” which are instances when the damage is PG&E’s fault.⁷⁰ In the first half of 2015, the most recent data in the record, PG&E responded to hundreds of thousands of requests to mark underground facilities for excavation work, and PG&E’s at-fault dig-in rate during that period was approximately 0.02%.⁷¹ In other words, PG&E accurately marked approximately 99.98% of the excavation requests on which it worked.⁷² The 0.02% figure includes dig-ins that resulted from factors other than imperfect maps or records, such as changed field conditions, or locate and mark operational errors unrelated to records.⁷³ Accordingly, at-fault dig-ins due to incorrect maps and records constitute a fraction of 0.02% of total dig-ins.⁷⁴

Since 2010, PHMSA has required gas distribution operators to submit metrics on excavation damage annually.⁷⁵ The totals reported by PHMSA show that PG&E has the lowest rate of excavation damage in California and is near the top performance quartile compared to the averages for operators in each of the other states—a noteworthy fact, given that PHMSA assesses California as lacking an effective excavation damage enforcement program.⁷⁶ SED’s experts did not dispute these statistics or the conclusions that PG&E’s experts drew about their

⁶⁹ 1/19/16 Tr. at 49:22 to 50:8 (SED/PWA); Ex. 4 at 8-4, 8-16, 8-17 (PG&E Reply Testimony, Paskett).

⁷⁰ PG&E OB at 11-12; Ex. 4 at 1-16:1 to 1-17:10 (PG&E Reply Testimony, Howe).

⁷¹ 1/20/16 Tr. at 329:2-10 (PG&E/Higgins); Ex. 4 at 3-40:21-23 (PG&E Reply Testimony, Higgins); *id.* at 7-Ex. 2 (PG&E Reply Testimony, Huriaux).

⁷² *Id.*

⁷³ 1/21/16 Tr. at 374:9-22 (PG&E/Thierry).

⁷⁴ *Id.*

⁷⁵ PG&E OB at 13; Ex. 4 at 8-5 (PG&E Reply Testimony, Paskett).

⁷⁶ Ex. 4 at 3-20:6-8 (PG&E Reply Testimony, Higgins); *id.* at 7-17 (PG&E Reply Testimony, Huriaux); *id.* at 8-20 to 8-21, 8-23 tbl.6 (PG&E Reply Testimony, Paskett); Ex. 10 at 8-22 & tbl.5 (PG&E Errata to Reply Testimony, Paskett).

implications for the safety of PG&E's system.⁷⁷ It was therefore appropriate for the POD to acknowledge and consider this evidence in the context of assessing fines.

SED and Carmel argue that, although the metrics may be accurate, sporadic anecdotal evidence of records imperfections suggests that PG&E's system is nevertheless unsafe.⁷⁸ SED and Carmel also mischaracterize the role that these statistics played in the POD's analysis, which never suggested that PG&E's overall performance excused any particular violation or diminished PG&E's responsibility to continue to pursue its aggressive improvement efforts.⁷⁹

A. Anecdotal Evidence of Imperfections in PG&E's Gas Distribution System Do Not Undermine the Conclusion That the System Is Operating Safely Overall.

SED and Carmel argue that isolated instances of imperfections in PG&E's records mean that its system cannot be generally in compliance with safety regulations.⁸⁰ These arguments are contrary to the acknowledgment by SED's experts at the hearing that it is not possible to draw general conclusions about PG&E's records or the safety of its system as a whole based on a small number of observations.⁸¹ A closer look at the evidence cited by SED and Carmel demonstrates that PWA's characterization was appropriate.

Mapping Corrections: SED and Carmel point to a PG&E report that identifies 390 "mapping error corrections" across PG&E's entire distribution system over a six-month period.⁸² On a distribution system of PG&E's size, this volume of mapping changes does not

⁷⁷ 1/19/16 Tr. at 49:22 to 50:8, 51:22 to 54:16 (SED/PWA).

⁷⁸ SED AB at 1-3; Carmel AB at 2-4; *see also* SED RB at 7-8; Carmel RB at 2-3.

⁷⁹ *See* POD at 45 (stating that although "[a] system that works over 99% of the time is not a *system* in need of improvement[. . .] isolated failures . . . must draw consequences to create incentives for constant improvement in execution").

⁸⁰ SED AB at 1-3; Carmel AB at 2-4; *see also* SED OB at 7-17; Carmel RB at 2-3.

⁸¹ 1/19/16 Tr. at 81:6 to 82:14 (SED/PWA).

⁸² SED AB at 2; Carmel AB at 2; *see also* SED OB at 7-8. Carmel also cites PG&E witness testimony that Carmel claims indicates that PG&E processed "close to 5,000 mapping corrections" over a two-year period. Carmel AB at 2-3 (citing Carmel RB at 2-3). Carmel's claim is not a fair representation of the

come close to establishing endemic recordkeeping problems. First, fewer than half of these “mapping corrections” involve correcting an actual “error” on a map rather than, for example, an update based on new information that had not been previously captured on PG&E’s maps.⁸³ For example, when the name of a road in PG&E’s service territory changes, the resulting update to PG&E’s plat map is counted as a mapping correction, even though no error has occurred.⁸⁴ Moreover, PG&E’s distribution maps have approximately 60 million data fields.⁸⁵ The number of mapping corrections identified by SED and Carmel reflect less than 1/1,000 of 1% of the mapping entries for PG&E’s system—a miniscule fraction.⁸⁶ SED’s and Carmel’s focus on isolated examples ignores the evidence of PG&E’s overall performance.

CAP Item Regarding At-Fault Dig-Ins: SED also proffers a 2014 CAP item that identifies an “adverse trend” in at-fault dig-ins.⁸⁷ However, as the CAP item notes, only a small fraction of these dig-ins were related to recordkeeping errors.⁸⁸ Moreover, a reported “trend” is meaningless without considering the context. For example, if, hypothetically, at-fault dig-ins were to go from five to ten in a given year, that would represent a 100% increase—an “adverse trend”—but the number of dig-ins in relation to the number of PG&E construction jobs during the same period would be miniscule. Thus, this single report must be evaluated in the context of

record. This assertion is based on the cross-examination testimony of a PG&E witness who estimated that the total number of CAP items submitted from October 2013 through the end of 2015—a period of about 27 months—was “about” 14,500 and who further testified that he “believe[d] about a third” of those were associated with mapping corrections, without any further specificity about the nature of these CAP items. *See* 1/21/16 Tr. at 539:5 to 541:10 (PG&E/Singh).

⁸³ PG&E RB at 44 & n.221; 1/21/16 Tr. at 418:14 to 420:6 (PG&E/Trevino); *id.* at 540:22 to 541:10 (PG&E/Singh).

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ SED AB at 2; *see also* SED OB at 9-10.

⁸⁸ Ex. 30 (Gas CAP Notification No. 7005503); *see also* 1/20/16 Tr. at 329:2-10 (PG&E/Higgins); 1/21/16 Tr. at 397:4-8 (PG&E/Thierry).

the evidence demonstrating PG&E's excavation damage performance overall.⁸⁹ PG&E does not consider any dig-in acceptable. But far from raising doubts about the overall safety of PG&E's system, this CAP item is consistent with PG&E's commitment to driving down the rate of dig-ins and improving safety.⁹⁰ CAP leverages inputs from PG&E's employees to identify and track issues throughout its system and, in many cases, formulate solutions.⁹¹ PG&E hopes the Commission views this CAP item—and CAP more generally—as an example of how PG&E has harnessed technology to enhance the safety of its gas distribution operations.

Plastic Pipe Without Locating Wire: SED points to a 2012 PG&E internal audit that identifies plastic pipe installed without locating wire, and claims that this undermines the reliability of PG&E's excavation damage metric.⁹² Not only is this not a recordkeeping issue, but the numbers in the audit do not support drawing any systemwide conclusions. The audit identifies locating wire issues as the cause of 17 dig-ins over the previous two years.⁹³ If the dig-in numbers for 2010 to 2012 (which are not in the record) were similar to those for 2013 and 2014, tracer wire issues would have caused less than 0.5% of total dig-ins.⁹⁴ The audit does not indicate a systemwide failure; it merely identifies an acknowledged risk that PG&E is addressing through revised procedures and enhanced training of locate and mark personnel.⁹⁵

⁸⁹ PG&E RB at 44; Ex. 4 at 8-5, 8-23 tbl.6 (PG&E Reply Testimony, Paskett); Ex. 10 at 8-22 & tbl.5 (PG&E Errata to Reply Testimony, Paskett).

⁹⁰ The CAP item explains that identification of this trend triggered a causal analysis, followed by a meeting to formulate corrective actions, and a notification in 6-12 months to evaluate the efficacy of those measures. Ex. 30 (Gas CAP Notification No. 7005503).

⁹¹ Ex. 4 at 5-23:8-16, 5-26:31 to 5-27:8 (PG&E Reply Testimony, Singh).

⁹² SED OB at 11-12.

⁹³ Ex. 32 (Internal Auditing Memo Re: Audit of Gas Damage Prevention Program (Feb. 10, 2012)).

⁹⁴ PG&E RB at 45; Ex. 4 at 7-Ex. 2 (PG&E Reply Testimony, Huriaux).

⁹⁵ See, e.g., Ex. 4 at 3-15:7-20 (PG&E Reply Testimony, Higgins); Ex. 6, Attachment W026 (Job Aid TD-5811P-103-JA01, Rev. 0, Troubleshooting Difficult to Locate).

Analysis of Dig-Ins Caused by Records: SED claims that one cannot conclude that PG&E’s gas distribution system is “99% safe” because there has been no analysis of the risk that “erroneous maps have contributed to at-fault dig-ins.”⁹⁶ SED bases this assertion on the cross-examination testimony of one PG&E employee who was unaware of such an analysis.⁹⁷ On the contrary, as PG&E has explained, it both analyzes the reasons for at-fault dig-ins on an ongoing basis, and evaluates the effectiveness of the corrective actions the Company has initiated to reduce dig-ins stemming from records issues.⁹⁸

Existence of Serious Incidents: Carmel argues that the POD must have ignored the incidents in Rancho Cordova in 2008 and in San Bruno in 2010 in reaching the conclusion that PG&E’s system generally complies with safety regulations today.⁹⁹ There is no basis for this accusation. The incidents and their consequences inform PG&E’s operations to this day. Extensive and undisputed evidence was presented in this proceeding about the numerous improvement initiatives that PG&E implemented after those incidents occurred to enhance the accuracy of its records and the safety of its system. Carmel fails to explain how the fact that those incidents occurred undermines a conclusion that PG&E operates a safe system today.

PG&E recognizes that some of those improvements to its system were being implemented or were in place at the time of the Carmel incident, and regrets the impact that the incident had on Carmel and its citizens. The safety of the public and PG&E’s employees are its top priority. As explained in sections above, PG&E has taken significant actions to implement

⁹⁶ SED AB at 2 (citing SED RB at 7). Neither PG&E nor the POD have characterized the gas distribution system as “99% safe.” Rather, as the record demonstrates, key national data indicates PG&E is performing near the top quartile nationally based on important safety metrics.

⁹⁷ SED RB at 7 (citing 1/21/16 Tr. at 374:23 to 375:9 (PG&E/Thierry)).

⁹⁸ PG&E RB at 54; Ex. 4 at 5-13:10-16, 5-32:24 to 5-33:30 (PG&E Reply Testimony, Singh); Ex. 6, Attachment W072 at W072.002 (PG&E’s Response to SED Data Request No. 88, Supp. 1).

⁹⁹ Carmel AB at 3.

lessons learned from the unfortunate accidents, which SED’s experts described as “very useful” and “effective.”¹⁰⁰ While PG&E does not believe that any serious safety incident is acceptable, it respectfully disagrees that the occurrence of a serious incident undermines a conclusion that its distribution system is generally in compliance with safety regulations.¹⁰¹

B. There Is No Evidence That PG&E’s Excavation Damage Metrics Are “Misleading.”

SED suggests that the comparisons PHMSA makes among operators regarding the rate of excavation damage might be “misleading” because the metrics include both at-fault dig-ins, as well as those for which the operator is not at fault.¹⁰² First, this is speculation, as there is no evidence or even reasoned basis to conclude that separating out at-fault and third-party dig-ins would make PG&E’s performance comparatively worse. Second, this is PHMSA’s methodology, not PG&E’s. A PHMSA working group concluded that total excavation damage normalized by number of tickets would be among the “most useful” performance measures for monitoring the effectiveness of an operator’s integrity management program.¹⁰³ SED has provided no basis to conclude that PG&E’s use of these statistics to establish the identical point is misleading.

In contrast, comparing—as SED and Carmel propose—the rate of excavation damage on PG&E’s system with the rate of fatalities in the aviation industry misrepresents the nature of excavation damage and the risk it poses to PG&E’s system. Carmel quotes statistics that the

¹⁰⁰ PG&E OB at 55; Ex. 1 at 65 tbl.9, 68:1-16 (PWA Report).

¹⁰¹ PG&E OB at 10; Ex. 4 at 3-1:8-20 (PG&E Reply Testimony, Higgins); *id.* at 6-3:9-13 (PG&E Reply Testimony, Thierry).

¹⁰² SED AB at 1-2.

¹⁰³ Ex. 9, Attachment E019 at E019.020, E019.040 (Pipeline & Hazardous Materials Safety Admin., et al. *Integrity Management for Gas Distribution Report of Phase I Investigations* (Dec. 2005)); *see also* Pipeline & Hazardous Materials Safety Admin., *Distribution Integrity Management Frequently Asked Questions* § C.4.e.1 (Aug. 2, 2010), <https://primis.phmsa.dot.gov/dimp/docsf/faq.pdf> (last revised July 1, 2015).

odds of a fatality on a single airline flight are 1 in 29.4 million.¹⁰⁴ While this extra-record statistic may or may not be correct, contrasting the odds of a fatality for a single airline flight to the safety of the nation’s distribution pipeline infrastructure is a flawed and misleading comparison.¹⁰⁵

In reality, natural gas distribution pipelines have an excellent safety record. Nationwide, over 10,000 cases of gas leaks are caused by excavation damage every year.¹⁰⁶ Yet, from 2010 through 2014, an average of six cases of excavation damage per year—or approximately 9/1,000 of 1%—were described by PHMSA as “serious” incidents.¹⁰⁷ And, even this relatively small number of “serious” incidents nationwide do not usually involve a fatality.¹⁰⁸ While PG&E takes all excavation damage seriously and is committed to driving its numbers down even further, SED’s and Carmel’s comparison of excavation damage with fatalities reflects a lack of understanding of the safety metric they are challenging.

¹⁰⁴ Carmel AB at 3-4. While SED does not use the word “fatality,” it compares PG&E’s rate of avoiding excavation damage to a commercial airline with a “99% flight success rate.” SED AB at 2. Aside from the fact that this analogy juxtaposes two things that are not remotely comparable, it vastly understates PG&E’s success rate in locating and marking. The 99.98% accuracy metric represents a failure rate of two out of 10,000, not one out of 100—a difference of nearly two orders of magnitude.

¹⁰⁵ A single airline flight is a one-time event that may last several hours over a 24-hour period. By comparison, the gas distribution system is in service 24 hours per day, seven days per week, 365 days a year. A more appropriate comparison would be with the consequences of “an incident on a single gas service line on a single day.” Using PHMSA’s 2015 national gas distribution safety metrics, *the calculated odds of a fatality due to a gas incident on a single gas service line on a given day is approximately 1 in 8.22 billion*. If distribution mains are also considered, the odds become nearly *1 in 17.3 billion*. Pipeline & Hazardous Materials Safety Admin., *Significant Incidents*, http://opsweb.phmsa.dot.gov/primis_pdm/significant_inc_trend.asp (reporting 3 natural gas distribution fatalities in 2015); Pipeline & Hazardous Materials Safety Admin., *Annual Report Mileage for Gas Distribution Systems*, <http://www.phmsa.dot.gov/pipeline/library/data-stats/annual-report-mileage-for-gas-distribution-systems> (reporting 1,276,388 miles of distribution mains and 67.6 million services in 2015).

¹⁰⁶ Ex. 4 at 8-18 (PG&E Reply Testimony, Paskett).

¹⁰⁷ *Id.* at 8-19 (PG&E Reply Testimony, Paskett).

¹⁰⁸ *Id.* at 8-17 (PG&E Reply Testimony, Paskett).

C. SED and Carmel Mischaracterize the Conclusions Reached in the POD.

1. The POD Did Not Assert That a 99.98% Accuracy Rate Is “Acceptable.”

SED claims that the POD committed error by “suggest[ing] that 99% safety is acceptable.”¹⁰⁹ That is not the case. The POD expressly “reject[ed]” any suggestion “that some level of compliance failure is acceptable.”¹¹⁰ Carmel similarly claims that the POD considered PG&E’s general compliance with the regulations when deciding whether PG&E had violated particular regulations.¹¹¹ The POD rejected this position as well: “There is no acceptable level of failure to comply with applicable law and regulations; each failure is a violation.”¹¹² The POD considered PG&E’s general compliance with safety regulations only in assessing the amount of the fine for the violations it identified.¹¹³ This consideration is required by the standards for assessing fines set forth in Public Utilities Code section 2104.5 and D. 98-12-075.¹¹⁴

2. The POD Did Not Conclude That a 99.98% Accuracy Rate Eliminates the Need for Further Improvement.

Contrary to SED’s assertion, the POD did not conclude, based on PG&E’s excavation damage performance, that PG&E does not need to further improve its recordkeeping.¹¹⁵ In fact, the POD repeatedly emphasized the importance of continuous improvement in PG&E’s operations.¹¹⁶ On the same page cited by SED for this point, the POD explained that PG&E must

¹⁰⁹ SED AB at 1.

¹¹⁰ POD at 25.

¹¹¹ Carmel AB at 3.

¹¹² POD at 56.

¹¹³ *Id.* at 25.

¹¹⁴ Cal. Pub. Util. Code § 2104.5; *Re Standards of Conduct Governing Relationships Between Energy Utils. & Their Affiliates*, D. 98-12-075, 1998 Cal. PUC LEXIS 1018, at *9-10.

¹¹⁵ SED AB at 2.

¹¹⁶ POD at 17, 25.

be penalized for failures in order “to create incentives for constant improvement in execution.”¹¹⁷ And the POD ordered the parties to meet and confer regarding a compliance plan that includes “all feasible and cost-effective measures necessary to improve PG&E’s natural gas distribution system recordkeeping.”¹¹⁸ Furthermore, there can be no question that PG&E is committed to continuous improvement, as the POD and PWA both acknowledge.¹¹⁹ Throughout this proceeding, PG&E welcomed PWA’s input on ways to further improve recordkeeping quality and agreed to implement or investigate many of PWA’s recommendations.¹²⁰

V. THE PENALTY ASSESSMENT

SED and Carmel continue to advocate for penalties that do not take into account PG&E’s measurable and significant strides in improving the quality of its records management practices and implementing industry-leading safety measures described above¹²¹ and the undisputed evidence that PG&E’s distribution system safety performance is near the top quartile of gas distribution operators nationally.¹²² Moreover, PG&E maintains that SED did not meet its burden of proving that PG&E violated pipeline safety regulations related to recordkeeping and

¹¹⁷ *Id.* at 25.

¹¹⁸ *Id.* at 54.

¹¹⁹ *Id.* at 17; Ex. 1 at 59-67 tbl.9 (PWA Report); Ex. 2 at 43-44 tbl.2 (PWA Rebuttal) (stating that “PG&E’s current efforts to improve its operation are extensive, and in many cases appear to represent best or innovative practices.”).

¹²⁰ Ex. 4 at 1-6:17 to 1-8:1 (PG&E Reply Testimony, Howe); *id.* at 5-6:7-17, 5-8:15-17, 5-11:25 to 5-12:13 (PG&E Reply Testimony, Singh); *id.* at 6-15:17 to 6-16:8 (PG&E Reply Testimony, Thierry); *see also* PG&E OB at 16-17 (discussing damage prevention measures); *id.* at 54-56 (discussing measures taken after Mountain View and Carmel incidents). Furthermore, though this issue does not implicate recordkeeping, PG&E also agreed to consider a policy to more aggressively eliminate mapped stubs on its system, even though PG&E already has a policy in place to remove mapped stubs, which PWA has described as “proactive.” PG&E OB at 30; Ex. 1 at 59 tbl.9, 75:37 to 76:2 (PWA Report); Ex. 4 at 5-6:7-10 (PG&E Reply Testimony, Singh); Ex. 7, Attachment W095 at W095.007 (SED’s First Responses to PG&E’s Data Requests Sets 2 and 3).

¹²¹ *See supra* pp. 5-12.

¹²² 1/19/16 Tr. at 51:22 to 54:15 (SED/PWA) (noting that PWA has not done an analysis of the publicly available PHMSA data set forth in Mr. Paskett’s report, but that PWA has no reason to doubt the data or conclusion presented by Mr. Paskett); *see* PG&E OB at 13-15.

that those violations led to the operation of an unsafe gas distribution system.¹²³ For these reasons, PG&E maintained throughout this proceeding that no penalty was warranted.¹²⁴

Although continuing to advocate that position in its post-hearing briefing, PG&E nevertheless also explained that the penalties imposed, if any, should be no greater than \$33.636 million, which, it submitted, was the maximum amount that should be levied under the relevant statutes and Commission precedent.¹²⁵ In its appeal, SED suggests that PG&E endorsed this “maximum” amount.¹²⁶ This argument misstates PG&E’s position. At no point did PG&E suggest that these “maximum” penalty amounts were warranted. Rather, it said that if the Commission disagreed with PG&E and concluded that violations had occurred, no penalties beyond these amounts were justified.¹²⁷ PG&E nevertheless does not contest the POD’s penalty assessment and submits that any fine should be directed to excavation damage prevention, rather than payable to the General Fund, so as to further the important objectives pursued in this proceeding.¹²⁸ Below, PG&E explains why the challenges to the imposed fine raised by SED and Carmel are without merit.¹²⁹

¹²³ *Investigation of TracFone Wireless, Inc.*, D. 15-05-032, 2014 Cal. PUC LEXIS 700, at *24; *Investigation of Qwest Commc’ns Corp.*, D. 03-01-087, 2003 Cal. PUC LEXIS 67, at *12-13, n.5 (citing *Investigation of Commc’ns Telesystems Int’l*, D. 97-10-063, 1997 Cal. PUC LEXIS 912, at *4 n.3).

¹²⁴ PG&E OB at 41-48; PG&E RB at A-1.

¹²⁵ PG&E RB at 7-11. PG&E does so without waiving any of its legal or factual arguments asserted throughout this proceeding or conceding that any of the violations alleged by SED have merit.

¹²⁶ SED AB at 3-4, 10-11, 20-21, 23-25.

¹²⁷ PG&E RB at 7-8.

¹²⁸ Public Utilities Code section 2107 does not require that a penalty be paid to the General Fund. Cal. Pub. Util. Code § 2107. All customers in PG&E’s service territory would benefit from ordered investments in a safer gas distribution pipeline system paid for by PG&E.

¹²⁹ *See, e.g., Investigation of Pac. Bell Wireless*, D. 04-09-062, 2004 Cal. PUC LEXIS 453, at *19-20; *Greenlining Inst., Latino Issues Forum v. Pac. Bell*, D. 01-04-037, 2001 Cal. PUC LEXIS 384, at *34.

A. The Total Fine of \$24.31 Million, in Addition to the \$10.8 Million Levied for the Carmel Citation, Is Consistent With the Traditional Factors Considered by the Commission in Setting Fines.

The Commission looks to Public Utilities Code section 2104.5 and D. 98-12-075 for the factors to be considered in determining an appropriate penalty.¹³⁰ When assessing a penalty, the Commission is required, among other things, to “address previously issued decisions involving sanctions, including ones with the most reasonably comparable facts.”¹³¹ The analysis should account for any “substantial differences in outcome.”¹³² PG&E respectfully submits that a meaningful evaluation of “reasonably comparable” precedents requires the identification of distinguishing characteristics on which to base thoughtful comparisons. The primary distinguishing characteristics of the incidents at issue in this proceeding are (1) absence of fatalities or bodily injury, (2) minor to severe property damage or customer inconvenience, and (3) the nature of the recordkeeping issues. Thus, PG&E submits that precedents based on “reasonably comparable” facts generally consist of prior Commission decisions in which fines have been imposed in response to non-injury incidents with some evidence of property damage, customer inconvenience, and/or recordkeeping issues.

As discussed in PG&E’s post-hearing briefs, past Commission penalties imposed for the Carmel Citation, Leak Survey Incident, and the Rancho Cordova incident suggest a “reasonably comparable” range for any penalty imposed in this proceeding. The bottom end of the range is suggested by the Commission’s \$10.85 million fine in connection with the citation issued to

¹³⁰ Stated generally, these factors are: (1) the severity of the offense; (2) the good faith of the utility, including the conduct of the utility before, during and after the offense to prevent, detect, disclose and rectify a violation; (3) the size of the business (including its financial resources); (4) the totality of circumstances in furtherance of the public interest; and (5) the role of precedent. Cal. Pub. Util. Code § 2104.5; D. 98-12-075, 1998 Cal. PUC LEXIS 1018, at *9-10, *70-77.

¹³¹ Resolution ALJ-277, *Affirming Citation No. ALJ-274 2012-01-001 Issued to Pac. Gas & Elec. Co. for Violations of Gen. Order 112-E*, 2012 Cal. PUC LEXIS 629, at *27-28.

¹³² D. 98-12-075, 1998 Cal. PUC LEXIS 1018, at *60.

PG&E for the Carmel incident, which alleged two violations for failing to equip its personnel with the tools necessary to stop the flow of gas and failing to make the surrounding area safe.¹³³ Notwithstanding PG&E's acknowledgment of the economic harm, potential harm, and inconvenience caused by each incident, because of the unique facts of Carmel, no other single incident should warrant a fine approaching \$10.85 million.

The penalty associated with the Leak Survey Incident is most relevant to the Commission's inquiry.¹³⁴ In 2011, PG&E self-reported to the Commission its discovery of 16 plat maps containing 13.83 miles of distribution mains and 1,242 services that had not been included in PG&E's leak survey schedule.¹³⁵ Upon discovery of this oversight, PG&E notified the Commission and, among other things, immediately leak surveyed all of the affected mains and services.¹³⁶ The leak surveys identified 23 leaks, the most serious one of which was immediately repaired.¹³⁷ Based on those facts, the Commission found 838 violations of 49 C.F.R. § 192.723(b)(2).¹³⁸ The violations were compounded monthly and PG&E was ordered to pay a fine of \$20,000 per violation, for a total of \$16.76 million.¹³⁹

The facts of the Leak Survey Incident are both similar yet also, in some ways, of greater magnitude than the incidents in this OII (with the exception of Carmel). Similar, in that the incident occurred on the gas distribution system and the violations resulted from an inaccurate record, in that case, the incomplete leak survey schedule. Following the missed leak surveys, PG&E discovered 23 gas leaks, which is roughly equivalent to the number of gas leaks caused

¹³³ Resolution ALJ-323, *Resolves the Appeal of Pac. Gas & Elec. Co. from Citation ALJ-274 2014-11-001 Issued by the Safety & Enft Div.*, 2015 Cal. PUC LEXIS 757, at *1-2, 6-7.

¹³⁴ POD at 22-23; PG&E RB at 23.

¹³⁵ Resolution ALJ-277, 2012 Cal. PUC LEXIS 629, at *2.

¹³⁶ *Id.* at *3.

¹³⁷ *Id.*

¹³⁸ *Id.* at *4-6, 10.

¹³⁹ *Id.* at *13-14.

by the dig-ins and construction work at issue in this case.¹⁴⁰ Different, in that the potential harm in that case extended to a much larger geographic area, as PG&E had not timely leak surveyed significant portions of seven East Bay cities.¹⁴¹ The Leak Survey Incident also involved over some 1,200 gas distribution services and over *14 miles* of distribution mains.¹⁴² The incidents in this OII at issue collectively involved 19 mains and services. As the POD acknowledged, the fine in this proceeding, after the \$10.85 million penalty levied for the Carmel incident is taken into account, is more than twice the penalty imposed for the Leak Survey Incident.

The Rancho Cordova incident involved a leak on a repaired distribution main that resulted in an explosion and fire that killed one person and injured two others.¹⁴³ That tragic accident was caused by the improper use of “packing pipe” to repair the pipeline and a failure to perform a pressure test.¹⁴⁴ The Commission ordered PG&E to pay a \$38 million penalty.¹⁴⁵ Unlike Rancho Cordova, the incidents here involved no loss of life or serious bodily injury.¹⁴⁶

¹⁴⁰ The 19 incidents described in the PWA Report resulted in 18 unplanned releases of gas. *See* SED OB at 77 (noting that Milpitas I did not result in a release of gas); Ex. 1 at 14 tbl.1, 15-24 tbl.2 (PWA Report).

¹⁴¹ Resolution ALJ-277, 2012 Cal. PUC LEXIS 629, at *2 (listing the Contra Costa County cities of Antioch, Brentwood, Byron, Concord, Danville, Discovery Bay, and Pittsburg).

¹⁴² *Id.* (noting that 1,242 services and 13.83 miles of mains were involved).

¹⁴³ *Order Instituting Investigation on the Comm’n’s Own Motion into the Operations & Practices of Pac. Gas & Elec. Co., Regarding the Gas Explosion & Fire on Dec. 24, 2008 in Rancho Cordova, Cal.*, D. 11-11-001, 2011 Cal. PUC LEXIS 509, at *1, 8-9.

¹⁴⁴ *Id.* at *24-28, 28 n.12.

¹⁴⁵ *Id.* at *62.

¹⁴⁶ PG&E and SED appear to agree that the San Bruno proceeding is not a relevant precedent. SED continues to argue that the Rancho Cordova incident and the Malibu Canyon fire are comparable cases. SED AB at 5-8; SED OB at 93-94. But the consequences resulting from those incidents were far more severe than the incidents at issue in this proceeding or the missing leak survey case. The property damage identified in SED’s Opening Brief totals approximately \$423,000, and, aside from the Carmel incident, the damage here is largely limited to PG&E’s pipelines and the immediate ground coverings. *See* SED OB at 73. In sharp contrast, the Rancho Cordova incident involved a fatality and significant injuries to two other persons, and the Malibu Canyon fire resulted in \$14.5 million in property damage, including numerous burned buildings and vehicles. *See* D. 11-11-001, 2011 Cal. PUC LEXIS 509, at *1, 8-9; *Investigation on the Comm’n’s Own Motion into the Operations & Practices of S. Cal. Edison Co., et al. Regarding the Util. Facilities & the Canyon Fire in Malibu of Oct. 2007*, D. 13-09-028, 2013 Cal. PUC LEXIS 514, at *1; POD at 23; PG&E RB at 20-21.

In sum, there is no Commission precedent for the fines proposed by SED and Carmel. The \$33.636 million maximum penalty described above by PG&E is near the high end of this range and is more appropriate than the fines proposed by SED and Carmel in light of the balancing of the traditional factors considered by the Commission.¹⁴⁷

B. Penalties Imposed for Specific Violations

1. The Incidents Do Not Demonstrate a Systemic Issue.

PG&E's undisputed overall excavation damage performance record, described above, demonstrates that PG&E's gas distribution system is safe and that PG&E continues to reduce risk on its system.¹⁴⁸ PG&E takes any incident that occurs on its system, including the incident such as the one in Carmel, very seriously, and reducing the risk of harm to people or property is PG&E's highest priority. Although incidents are never acceptable, some degree of risk will always be present in transporting natural gas under pressure¹⁴⁹—as PWA acknowledges, “absolute safety” could only be achieved at an “infinite cost.”¹⁵⁰ However, SED has focused only on 19 isolated incidents that occurred on 42,000 miles of distribution mains and 3.3 million services over a six-year period.¹⁵¹ SED's experts admit that no general conclusions about the safety of PG&E's gas distribution system or the quality of its recordkeeping as a whole can be drawn from such a small sampling of PG&E's operations.¹⁵²

¹⁴⁷ SED is correct that PG&E meant to refer to the \$28.1 million included in the Malibu Fire penalty that was not considered a fine but was instead allocated for remedial measures. SED AB at 7. PG&E's point was that the entire \$63.5 million figure should not be a precedent for the imposition of a fine in this case, only the \$35.4 million payable to the General Fund. PG&E RB at 21. But because the Malibu Canyon fire was not comparable factually, the allocation of the settlement in that case is irrelevant and cannot have led to any legal error. POD at 22-23.

¹⁴⁸ *See supra* pp. 12-14.

¹⁴⁹ PG&E OB at 10; Ex. 4 at 1-15:11-21 (PG&E Reply Testimony, Howe).

¹⁵⁰ Ex. 2 at 32 tbl.2 (PWA Rebuttal) (“PWA's report does not require or propose ‘absolute safety’ since this can only be achieved at infinite cost”).

¹⁵¹ Ex. 4 at 6-3:9-13 (PG&E Reply Testimony, Thierry).

¹⁵² 1/19/16 Tr. at 81:6 to 82:14 (SED/PWA).

SED disputes the characterization of these incidents as “isolated failures” and cites to a section of D. 98-12-075 that explains that a “series of temporally distinct violations can suggest an ongoing compliance deficiency which the public utility should have addressed after the first instance.”¹⁵³ But these incidents occurred over a six-year period during which PG&E marked well over two million USA tickets.¹⁵⁴ Nineteen incidents out of more than two million tickets worked—or 0.001%—is a minute fraction, a fact that SED’s experts acknowledged.¹⁵⁵ PWA admitted that it did not draw any conclusions about the quality of PG&E’s recordkeeping or safety by extrapolating from these 19 incidents to PG&E’s system as a whole.¹⁵⁶ Nor could any legitimate conclusions about PG&E’s system as a whole be based on such limited observations.

2. SED’s and Carmel’s Proposed Alternative Penalties Ignore the Necessary Fact-Specific Inquiry for Each Incident and Are Based on Mistaken Premises.

SED’s and Carmel’s proposed fines fail to take into account the factors for assessing the severity of harm and the conduct of the utility, as required by D. 98-12-075.¹⁵⁷ SED proposes that a fine at the highest end of the range permitted by section 2108 should be imposed for each of the three violations for each incident, regardless of the factual variations among them.¹⁵⁸ Carmel agrees and further argues that each of these three violations “must” be deemed a

¹⁵³ SED AB at 22 n.74 (citing D. 98-12-075, 1998 Cal. PUC LEXIS 1018, at *56).

¹⁵⁴ 1/19/16 Tr. at 77:9 to 80:19 (SED/PWA).

¹⁵⁵ *Id.* at 80:1-19 (SED/PWA).

¹⁵⁶ *Id.* at 81:6 to 82:14 (SED/PWA).

¹⁵⁷ SED AB at 16-29; Carmel AB at 8-9; *see* D. 98-12-075, 1998 Cal. PUC LEXIS 1018, at *54.

¹⁵⁸ In its post-hearing brief, SED made the opposite mistake by recommending fines for the specific incidents that, as the POD described them, “vary significantly for substantially similar conduct.” POD at 45. According to the POD, the obligation to provide a “reasoned basis” for assessing fines was part of the reason the total fine amounts are substantially lower than those proposed by the SED. POD at 45 n.41. SED interprets this statement as somehow suggesting that the Presiding Officer felt constrained from imposing higher fines by SED’s proposed penalty. SED AB at 16. Nothing in the POD suggests that the Presiding Officer believed a higher fine was appropriate but felt so constrained.

continuing violation for which daily fines must also be imposed.¹⁵⁹ Both propose a strictly mechanical imposition of fines that ignores the fact-specific inquiry required by D. 98-12-075, which the POD conducted.¹⁶⁰ As a result, these proposals cannot be reconciled with the POD's conclusions regarding the severity of these incidents as well as other mitigating factors, such as PG&E's overall safety performance and demonstrated commitment to continuous improvement.

SED and Carmel also criticize the POD's distinction based on whether a PG&E crew or third-party crew contributed to the damage. But their criticism stems, in part, from the fact that they misunderstand the distinction made between "PG&E crews" and "contractors." Contrary to SED's claim, the POD does not suggest that "PG&E's use of a contractor mitigates PG&E's violations."¹⁶¹ The POD treats incidents involving PG&E crews and independent contractors *hired by PG&E* equally.¹⁶² Instead, the POD distinguishes between PG&E crews and PG&E contractors, on the one hand, and *excavators hired by a third party*, such as the water utility or a private party, on the other.¹⁶³ Carmel claims that this distinction is "of no consequence" because in each case PG&E had an inaccurate or incomplete record.¹⁶⁴ But it is reasonable to conclude

¹⁵⁹ Carmel suggests that the Commission "must" impose a fine for every regulatory violation it identifies. Carmel AB at 4-5, 7, 13. Carmel's position is directly contradicted by the only authority it cites, D. 15-04-024 in the San Bruno Transmission Recordkeeping OII. In that decision, the Commission conducted the calculation that Carmel claims is mandated by the Public Utilities Code and concluded that, because this "mechanical imposition of a penalty" would result in an "excessive" fine, it would "reduce the fine to a reasonable level" well outside the range that Carmel claims is required by the Code. *Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. to Determine Violations of Pub. Util. Code § 451, Gen. Order 112, & Other Applicable Standards, Laws, Rules & Regulations in Connection with the San Bruno Explosion & Fire on Sept. 9, 2010*, D. 15-04-024, 2015 Cal. PUC LEXIS 230, at *62-63; *see also Order Instituting Investigation Into S. Cal. Edison Co.'s Elec. Line Constr., Operation, & Maint. Practices*, D. 04-04-065, 2004 Cal. PUC LEXIS 207, at *27-28 (finding that Commission has "discretion in determining whether and how much to penalize [an operator] for uncured violations").

¹⁶⁰ D. 98-12-075, 1998 Cal. PUC LEXIS 1018, at *9-10, *19.

¹⁶¹ SED AB at 17-18.

¹⁶² POD at 49.

¹⁶³ *Id.*

¹⁶⁴ Carmel AB at 7-8.

that PG&E has greater culpability for an incident in which it directly caused the excavation damage as opposed to one in which a third party's excavator contributed to the dig-in,¹⁶⁵ even though third parties also have obligations to dig safely and should be incentivized to do so.¹⁶⁶

3. The Cumulative \$21.6 Million Fine for the Carmel Incident Is Substantial.

SED argues that the POD committed legal error by failing to impose a \$20.73 million fine for the recordkeeping error associated with the Carmel incident,¹⁶⁷ in addition to the \$10.8 million fine imposed by the POD in connection with that incident, and the \$10.85 million fine imposed by the Commission in 2015 for operational errors occurring on the day of the incident.¹⁶⁸ Thus, SED proposes that the Commission impose a total of \$42.38 million in fines for the Carmel incident.

Such a penalty would be disproportionate to the harm that resulted and would be of an unprecedented size for such an incident. By way of comparison, the fine imposed on PG&E for the Rancho Cordova incident, which involved one fatality and serious bodily injury to two others, was \$38 million.¹⁶⁹ PG&E regarded the Carmel incident as a matter of very serious concern and responded aggressively to address the risks that led to it, adopting a number of measures that PWA viewed favorably.¹⁷⁰ In light of this response and the relative severity of the

¹⁶⁵ POD at 49 (“PG&E’s crews should be held to a higher standard because they are experts in natural gas systems.”).

¹⁶⁶ See Ex. 10 at 8-22 (Errata to PG&E Reply Testimony, Paskett) (“PG&E’s excavation damage prevention program is effective due to the Company’s aggressive efforts to address the threat of excavation damage and in spite of the challenges of operating in a state without an effective damage prevention program”).

¹⁶⁷ SED AB at 21-22.

¹⁶⁸ POD at 30-31.

¹⁶⁹ D. 11-11-001, 2011 Cal. PUC LEXIS 509, at *61-65.

¹⁷⁰ In fact, since the Carmel incident, PG&E has not encountered any unmapped plastic inserts as a result of using the Gas Carrier Pipe Checklist. See 1/20/16 Tr. at 306:2-8 (PG&E/Higgins).

harm caused by the incident compared to prior cases, PG&E submits that no fine beyond the \$21.6 million already imposed would be appropriate.

4. A Higher Fine for the Milpitas I Incident Would Not Be Proportional.

The POD imposed a fine of \$1.974 million for the Milpitas I incident for a violation of Public Utilities Code section 451 because the incident involved the interruption of gas service to 987 customers,¹⁷¹ despite acknowledging that there were no related “injuries or documented economic losses.”¹⁷² SED claims that Milpitas I also involved two separate violations of 49 C.F.R. § 192.605(b)(3) and argues that PG&E should accordingly be fined an additional \$100,000 in connection with that incident.¹⁷³ Imposing a penalty on this basis would be inconsistent with the factual findings and the evidentiary record. Section 192.605(b)(3) addresses an operator’s procedures for “making construction records, maps, and operating history available to appropriate operating personnel.”¹⁷⁴ However, the POD concluded that the relevant Milpitas I “records were correct,” and there is no suggestion that records were not provided to field personnel.¹⁷⁵ Moreover, increasing the POD’s \$1.974 million would be at odds with the instruction in D. 98-12-075 to take into account the severity of harm when imposing fines—given that Milpitas I caused no injuries, no significant property damage, and no unplanned release of gas.¹⁷⁶

¹⁷¹ POD at 50-51.

¹⁷² *Id.* at 50.

¹⁷³ SED AB at 25.

¹⁷⁴ POD at 47. The POD notes that there was a recordkeeping-related failure in that the field conditions were inconsistent with the map, but its statement that the “records were correct” is an acknowledgement that PG&E’s mistake was operational—a failure to leave a valve open—not a failure to update or maintain a map or record. *Id.* at 49-50.

¹⁷⁵ POD at 49.

¹⁷⁶ D. 98-12-075, 1998 Cal. PUC LEXIS 1018, at *54-55.

5. The Alameda, Alamo, Antioch, Lafayette, San Francisco, and San Jose I Incidents Do Not Warrant Penalties.

SED argues that the POD erred in failing to find any violations for the Alameda, Alamo, Antioch, Lafayette, San Francisco, and San Jose I incidents. All but one of the alleged violations are unrelated to recordkeeping and are therefore outside the scope of this proceeding.¹⁷⁷ In Commission proceedings, the scoping memo defines and limits the “issues to be addressed,”¹⁷⁸ and the scoping memo in this proceeding defines the question before the Commission as whether PG&E violated any applicable laws, regulations, or rules by its “*recordkeeping policies and practices* with respect to maintaining safe operation of its gas distribution system.”¹⁷⁹

PWA agreed that they took an over-inclusive approach to identifying purported violations by including many regulations that do not address recordkeeping requirements.¹⁸⁰ For each of these six incidents, SED alleged that PG&E violated 49 C.F.R. § 192.614(c)(5) or California Government Code § 4216.3(a)(1), both of which contain operational standards for locating and marking underground facilities and are unrelated to recordkeeping.¹⁸¹ As the POD noted with respect to section 4216.3(a)(1), it “does not require the operator to maintain accurate records.”¹⁸² Similarly, SED asserted a violation of section 192.727(b) in connection with the Lafayette incident, but that section addresses the deactivation of abandoned mains and also does not relate to recordkeeping.¹⁸³

¹⁷⁷ Scoping Memo at 3; PG&E OB at 41-42, B-2 to B-7; PG&E RB at A-12 to A-14.

¹⁷⁸ Cal. Pub. Utils. Comm’n, Rules of Practice & Procedure, Rule 7.3(a); *S. Cal. Edison Co. v. Pub. Utils. Comm’n*, 140 Cal. App. 4th 1085, 1091 (2006).

¹⁷⁹ Scoping Memo at 3 (emphasis added).

¹⁸⁰ PG&E OB at 42; Ex. 1 at 25-26 (PWA Report).

¹⁸¹ SED OB at 85-86.

¹⁸² POD at 46.

¹⁸³ SED OB at 63-64.

SED also alleged violations of section 192.605(a) for the Alameda, Antioch, Lafayette, and San Jose I incidents,¹⁸⁴ but the POD declined to find PG&E in violation of that regulation in connection with any incident.¹⁸⁵ SED argues in the alternative that the Commission should find that PG&E violated section 451 in connection with these six incidents,¹⁸⁶ but SED never alleged such a violation for any of these incidents except for Alamo, and the alleged deficiency in that case was unrelated to recordkeeping.¹⁸⁷ Rather, the locator was unable to precisely locate a pipe due to flooding in the excavation area, which reduced his instrument's capabilities.¹⁸⁸

C. The Penalty for the Missing De Anza Records

In connection with its investigation into the Mountain View incident, PG&E learned that paper copies of the 1979-1991 leak repair records for the De Anza Division, which includes Mountain View, were missing.¹⁸⁹ At the hearing, SED and Carmel attempted to create a linkage between this fact and the Mountain View incident.¹⁹⁰ There is no evidence whatsoever that these missing paper records contributed to the Mountain View incident or any other incident at issue in this proceeding.¹⁹¹ In fact, the information in these leak repair records, or A Forms, was routinely entered into and preserved in an electronic database,¹⁹² so the fact that the paper records are missing does not interfere with PG&E's ability to operate its system safely.¹⁹³

¹⁸⁴ SED OB at 87-89.

¹⁸⁵ POD at 47-48 (only finding PG&E in violation of sections 192.603(b), 192.605(b)(3), and 451).

¹⁸⁶ SED AB at 21-22.

¹⁸⁷ SED OB at 28-29.

¹⁸⁸ PG&E RB at B-15.

¹⁸⁹ PG&E OB at 47 n.292, 51; PG&E RB at 33-34.

¹⁹⁰ 1/21/16 Tr. at 473:18-28, 479:9-16, 481:20-27 (PG&E/Singh).

¹⁹¹ PG&E OB at 52; PG&E RB at 33-34.

¹⁹² POD at 34; 1/21/16 Tr. at 437:23 to 439:17 (PG&E/Trevino); *id.* at 485:1-25 (PG&E/Singh); Ex. 4 at 6-6:29-32 (PG&E Reply Testimony, Thierry); Ex. 33 (PG&E's Supplemental Response No. 1 to SED Data Request No. 25).

¹⁹³ PG&E OB at 51-52.

Nevertheless, the POD fined PG&E \$10.786 million for not “promptly and comprehensively” assessing the consequences of the issue when it was first discovered.¹⁹⁴ The POD based this \$10.786 million figure on a daily calculation of \$834.95 from January 1, 1979, the earliest possible date of a missing A Form, until December 31, 2011, the approximate date that PG&E first discovered they were missing. Carmel challenges this \$834.95 amount on the basis that it is “strange” and that the POD contains “no discussion of the threat of harm” caused by the missing A Forms.¹⁹⁵ On the contrary, the POD explained that the “severity of the harm,” if any, is quite limited” because the information PG&E needs to operate its system safely is preserved in its electronic leak repair database.¹⁹⁶ Therefore, Commission precedent requires that a fine at the lower end of the statutory range be imposed.¹⁹⁷

SED argues that a different end date for the calculation of the fine should be used. However, the alternative end dates that SED proposes are at odds with the basis for the violation—failure to conduct a risk analysis. SED proposes that June 12, 2015 should be used, which is the date PG&E reported the missing records to SED,¹⁹⁸ but this would suggest that PG&E had an obligation to report this issue sooner, an assumption for which there is no basis in the record.¹⁹⁹ In the alternative, SED suggests that the Commission use the date in 2014 on

¹⁹⁴ POD at 37-41.

¹⁹⁵ Carmel AB at 8-9.

¹⁹⁶ POD at 37-39. While not directly challenging this figure, SED proposes a “simpler \$1,000” daily fine. SED AB at 15. SED does not explain why this figure is “simpler” or why this upward adjustment of the daily fine amount would be justified under the POD’s analysis. *Id.*

¹⁹⁷ POD at 37-39.

¹⁹⁸ SED AB at 13.

¹⁹⁹ *Id.* at 11-16. In a footnote, SED also challenges the POD’s finding that PG&E had no obligation to report this issue to SED sooner. *Id.* at 13 n.44. PG&E reported this issue in June 2015, when it responded to SED’s data request—which, as the POD noted, provided SED with ample time for it to prepare this issue for this proceeding—and had no obligation to do so earlier. POD at 40. SED argued below that PG&E should have included this issue in its Initial Report in response to the OII. SED OB at 48. As the POD found, the OII instructed PG&E to identify in its Initial Report only the incorrect factual contentions from the SED Incident Investigation Reports for the incidents that prompted the OII.

which SED claims PG&E management learned of the missing records, rather than the approximate date lower-level personnel learned of the issue in 2011.²⁰⁰ According to SED, using the 2011 end date could “signal[] to PG&E personnel to not report such deficiencies to PG&E management.”²⁰¹ First, SED did not allege (and the POD did not find) that there was any failure by PG&E personnel to report this issue to management promptly. Second, the POD imposed a fine of \$10.786 million for a failure to “promptly” assess the consequences of this issue.²⁰² It is highly unlikely that this could be interpreted as a signal not to timely report such issues.

D. There Was No Violation in Connection with PG&E’s Method for Setting Maximum Allowable Operating Pressure.

While unrelated to any of the incidents that prompted this OII, SED also challenged in this proceeding the method that PG&E used to set the maximum allowable operating pressure (MAOP) on approximately 243 of its distribution systems.²⁰³ The parties have referred to this as the “alternative method.”²⁰⁴ While there is no dispute that PG&E’s alternative method does not pose any safety risk, SED nevertheless alleged that its use is a violation of 49 C.F.R. § 192.619(c).²⁰⁵ In response, PG&E explained that the alternative method is consistent with multiple pieces of PHMSA guidance regarding the application of section 192.619(c) dating back to at least 1986.²⁰⁶ PG&E also submitted evidence that, not only had this policy been repeatedly disclosed to Commission staff over the years without their raising any objections, but SED had provided express written approval for its use in connection with a specified distribution system in

OII at 9. SED has never attempted to identify a fact in any of the SED Incident Investigation Reports that relates to the missing A Forms, and there is none. SED OB at 47-48.

²⁰⁰ SED AB at 12.

²⁰¹ *Id.*

²⁰² POD at 38-39.

²⁰³ SED OB at 67-71; Ex. 1 at 49-54 (PWA Report); *see also* PG&E OB at 56-62.

²⁰⁴ PG&E OB at 61; Ex. 1 at 106 (PWA Report).

²⁰⁵ Ex. 2 at 29 tbl.2 (PWA Rebuttal); *see also* PG&E OB at 56-62.

²⁰⁶ Ex. 4 at 5-15:20-25, 5-16:10 to 5-17:17 (PG&E Reply Testimony, Singh).

a letter to PG&E in 2013.²⁰⁷ Based on these facts, PG&E argued that it should not be sanctioned for a longstanding policy that is consistent with regulatory guidance and has been recently approved by SED.²⁰⁸ The POD agreed, and found that SED had not carried its burden of proving this alleged violation.²⁰⁹

On appeal, SED contends that this finding is in error because PG&E had previously admitted that its alternative method violates section 192.619, an assertion SED had not made before in this proceeding.²¹⁰ PG&E made no such admission. SED's claim is based on a mischaracterization of a letter PG&E sent SED in 2010.²¹¹ In that letter, PG&E acknowledged that it "could not locate any MAOP documentation" for a particular system in Colusa, which PG&E stated constituted a violation of section 192.619.²¹² The admitted violation in that instance was for a missing record, not for the use of the alternative procedure, which requires the creation and maintenance of MAOP records such as leak survey and pressure log documentation and employee certifications.²¹³ Removing any doubt that the admitted violation in Colusa was not related to the violation alleged in this proceeding, PG&E explained to SED just a few lines later in the same letter that it would address the admitted violation by *using* the alternative

²⁰⁷ Ex. 8, Attachment W131 (Letter from Michael Robertson, SED to Jane Yura, PG&E (July 2, 2013)).

²⁰⁸ PG&E OB at 62.

²⁰⁹ POD at 31-34.

²¹⁰ SED AB at 8-9.

²¹¹ Ex. 7, Attachment W106 (Letter from Glen Carter, PG&E to Banu Acimis, Cal. Pub. Utils. Comm'n).

²¹² *Id.* at W106.013.

²¹³ *Id.*; *see also* Ex. 4 at 5-15:14-28 (PG&E Reply Testimony, Singh); Ex. 7, Attachment W098 at W098.002 (Utility Procedure TD-4125P-01, Rev. 0, Establishing and Maintaining Distribution MAOP Records).

method.²¹⁴ PG&E even attached the PG&E procedure that describes this method as further clarification of the approach it would take.²¹⁵

In response to this letter, SED requested documentation demonstrating that PG&E had in fact established the MAOP for the system in Colusa using the alternative method and, once PG&E provided it, informed PG&E that it had “determined to officially close [this] probable violation.”²¹⁶ SED further explained to PG&E that it “accepts PG&E’s explanation and corrective action to re-establish the MAOP documentation” in Colusa²¹⁷—thereby expressly accepting PG&E’s use of the very method that SED claims is a violation in this proceeding. None of this evidence has been contested.

In conclusory fashion, SED states that “there is no difference in principle between the missing Colusa records” and the violations based on the use of the alternative method alleged here.²¹⁸ But if there were no difference, how could PG&E (with SED’s acknowledgement and approval) have resolved the admitted violation in Colusa by using the alternative method? PG&E’s Vice President for Gas Asset and Risk Management explained all of this in his written testimony, a small portion of which SED excerpts in its Appeal.²¹⁹ But SED omits the substance

²¹⁴ Ex. 7, Attachment W106 at W106.013 (Letter from Glen Carter, PG&E to Banu Acimis, Cal. Pub. Utils. Comm’n); *see also* PG&E OB at 56-62.

²¹⁵ Ex. 7, Attachment W106 at W106.013 (Letter from Glen Carter, PG&E to Banu Acimis, Cal. Pub. Utils. Comm’n); *see also* PWA Report at 53 tbl.7.

²¹⁶ Ex. 8, Attachment W129 (Email between Banu Acimis, SED and Lawrence Berg, PG&E re: Data Requests and Responses for 2010 Sacramento Division Audit (June 11-14, 2012)); *id.*, Attachment W130 (“MAOP-178.pdf” produced to SED (June 14, 2012)); *see also* PG&E OB at 56-62.

²¹⁷ Ex. 8, Attachment W131 at W131.003 (Letter from Michael Robertson, SED to Jane Yura, PG&E (July 2, 2013)).

²¹⁸ SED AB at 9.

²¹⁹ *Id.* at 8; Ex. 4 at 5-19:13 to 5-20:17 (PG&E Reply Testimony, Singh).

of his testimony and does not attempt to explain how its allegations can be reconciled with the record it describes.²²⁰

Attempting to challenge the POD's legal findings on this issue, SED cites a Commission ratesetting decision that it characterizes as "emphasiz[ing] the importance of recordkeeping to comply with the requirements of 192.619."²²¹ No party disputes the importance of recordkeeping. What PG&E has stated is that, under the circumstances that existed here, a written certification of operating pressure by a knowledgeable employee may be used in lieu of a pressure log or similar record to satisfy the requirements of that regulation.²²² Based on its interpretation of section 192.619(c) and its review of multiple pieces of related PHMSA guidance, the POD agreed that this is permitted.²²³ The decision cited by SED does nothing to undermine this conclusion. SED has therefore failed to establish that the POD was in error when it concluded that SED has failed to prove a violation of section 192.619(c).

VI. CARMEL'S PROCEDURAL CHALLENGES SHOULD BE REJECTED.

Finally, Carmel raises a number of procedural challenges to the POD.²²⁴ PG&E agrees that it would be appropriate for the Commission to leave this proceeding open, as Carmel suggests, so that the Presiding Officer may assess the plan for remedial measures produced through the ordered meet-and-confer process.²²⁵ Otherwise, PG&E respectfully disagrees with Carmel's arguments.

²²⁰ SED AB at 8.

²²¹ *Id.* at 9 (citing *Order Instituting Rulemaking on the Comm'n's Own Motion to Adopt New Safety & Reliability Regulations for Nat. Gas Transmission & Distrib. Pipelines & Related Rulemaking Mechanisms*, D. 12-12-030, 2012 Cal. PUC LEXIS 600, at *168-69).

²²² PG&E OB at 58-59.

²²³ POD at 31-34.

²²⁴ Carmel AB at 9-12.

²²⁵ *Id.* at 11-12.

First, Carmel is mistaken when it asserts that the POD failed to address whether PG&E’s shareholders or ratepayers are responsible for the penalty payable to the General Fund.²²⁶ There is no dispute that PG&E shareholders are responsible for any penalty payments.²²⁷ The Scoping Memo states that this proceeding should determine whether PG&E can seek ratemaking recovery “to the extent any remedial safety measures are ordered.”²²⁸ No such measures have been ordered yet, but PG&E proposes that the parties incorporate into their meet-and-confer process and proposed compliance plan a discussion of whether shareholders or ratepayers will pay for any particular recommended remedial measure.

Second, the POD does not leave open the question of whether Carmel may participate in this meet-and-confer process.²²⁹ The POD repeatedly states that all “parties to this proceeding,” as well as to PG&E’s most recent General Rate Case and the 2011 Transmission Recordkeeping OII, are invited.²³⁰

Third, PG&E disagrees with Carmel’s position that the POD’s meet-and-confer instructions are too vague to be implemented.²³¹ The POD ordered PG&E to convene a process that would “begin” with a review of the proposed remedial measures ordered in the transmission recordkeeping investigation, but should also consider any remedial measures necessary “to address the issues identified in today’s decision.”²³² The POD further ordered that the proposed

²²⁶ *Id.* at 9-10.

²²⁷ Resolution ALJ-274, *Establishes Citation Procedures for the Enf’t of Safety Regulations by the Consumer Prot. & Safety Div. Staff for Violations by Gas Corps. of Gen. Order 112-E & Code of Fed. Regulations, Title 49, Parts 190, 191, 192, 193, & 199*, 2011 WL 6278266, Cal. P.U.C., at *1 (stating that penalty payments for violations of GO 112-E and 49 C.F.R. pts. 190-193 and 199 are the responsibility of shareholders).

²²⁸ Scoping Memo at 3.

²²⁹ Carmel AB at 11-12.

²³⁰ POD at 54, 62.

²³¹ Carmel AB at 11-12.

²³² POD at 54.

compliance plan produced as a result of the meet and confer process is to include disagreements that any party has with any aspect of the plan, “including any omission, along with alternative recommendations and supporting rationale.”²³³ For the reasons PG&E explains in the attached Appendix B, all of the remedial measures proposed by Carmel are either being addressed in other proceedings, such as the pending Safety Culture OII, or do not relate to recordkeeping, and therefore are outside the scope of this OII.²³⁴

Fourth, the order that the parties meet and confer regarding the proposed remedial measures was not a “hastily prepared afterthought.”²³⁵ That is an unfair characterization. In fact, this instruction was necessitated by the fact that neither SED, Carmel, nor TURN proposed any of the remedial measures at issue until after the close of evidence, at which point there was no opportunity to develop a factual record or present evidence on their efficacy or feasibility. Moreover, as PG&E pointed out in its Reply Brief and in Appendix B, many of these proposed remedial measures were either unclear or unworkable on their face, but appeared to contain concepts that PG&E believes are appropriate, aspects of which PG&E is currently implementing. As a result, PG&E is optimistic that a collaborative meet-and-confer process should reduce the scope of the parties’ disputes regarding the proper remedial measures and result in further actions to improve system safety.

VII. CONCLUSION

PG&E has an unwavering commitment to continuously improving not only its gas distribution system recordkeeping practices but also the safety of its distribution system, and complying with all applicable rules, regulations, and statutes. PG&E is also committed to

²³³ *Id.*

²³⁴ PG&E RB at 57-61.

²³⁵ Carmel AB at 11.

continuing to work with the Commission to pursue these important goals. The many initiatives PG&E has undertaken to build state-of-the-industry infrastructure, achieve recordkeeping best practices, and minimize the risk of incidents on its gas distribution system demonstrate the durability and sincerity of PG&E's commitment.

PG&E acknowledges that more work remains to be done and that, at times in the past, its conduct has not measured up to the high expectations that the Company sets for itself. PG&E intends to continue doing exactly what it has been doing—focusing on safety, finding and fixing issues as they arise, and searching for innovative, effective, and technologically advanced solutions to the challenges that remain.

For the reasons stated above, PG&E submits that the arguments advanced on appeal by SED and Carmel for increasing the penalties imposed in the POD are unsupported by or contrary to the evidence of record, inconsistent with the governing legal standards, and accordingly should be rejected by the Commission. PG&E looks forward to working cooperatively with SED and the Intervenors in the meet-and-confer process to identify and consider further opportunities to continue improving its recordkeeping and other practices to better serve the public and promote the safety of its system.

Respectfully submitted,

/s/ Lise H. Jordan

LISE H. JORDAN
ELIZABETH COLLIER
Pacific Gas and Electric Company
Law Department
77 Beale Street
San Francisco, CA 94105
Telephone: (415) 973-6965
Facsimile: (415) 973-0516
Email: lhj2@pge.com
Email: eacp@pge.com

/s/ Marie L. Fiala

MARIE L. FIALA
JOSHUA HILL
Sidley Austin LLP
555 California Street
San Francisco, CA 94104
Telephone: (415) 772-1200
Facsimile: (415) 772-2400
Email: mfiala@sidley.com
Email: jhill@sidley.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

Dated: July 18, 2016

APPENDIX A

PG&E’s Measures to Continue to Improve Gas Distribution Recordkeeping and Promote Safety

Type of Measure	Description of Measure¹
Records Accuracy Improvements	PG&E implemented GD GIS as part of its Pathfinder Project in 2012. GD GIS was deployed across all divisions in August 2015. ²
	Data has been captured from GSRs and integrated into GD GIS, which has enabled PG&E to create an inventory of stubs in a centralized database. ³ This allows PG&E to more efficiently and effectively execute its stub monitoring and removal program, for which PG&E published an updated procedure. ⁴
	PG&E implemented the PAR process for automatically flagging anomalies in data being converted into GD GIS. ⁵
	PG&E created an Asset Registry module within SAP to serve as an inventory of data and maintenance plans for the gas distribution system. PG&E uses SAP to track the transfer of construction as-built records to PG&E’s mapping systems. ⁶
	PG&E implemented Documentum as its primary electronic records repository for unstructured data. Documentum improves records search capabilities and allows for the management of workflows and record lifecycles in a centralized system. ⁷
	PG&E validated gas distribution asset data by comparing distribution asset maps with meter locations included in its customer billing data. ⁸
	In 2014, PG&E began updating SAP with leak repair data captured in electronic A-Forms and validated its gas distribution asset data by comparing these records. ⁹
	PG&E is validating its GD GIS asset data by comparing it with Google Earth maps. ¹⁰
	In 2013, PG&E released an As-Built Drawing Handbook and As-Built Checklist designed to standardize the creation of as-built records, and conducted a series of related trainings. ¹¹
	PG&E is updating its Gas Mapper Manual to cover enhanced practices and procedures, such as GD GIS. It also created training programs for mappers, such as the Mapping Advancement Program and Pathfinder Bootcamp. ¹²
	PG&E instituted a “two person integrity” process that requires mapping jobs completed by a trained mapper to be verified by another trained mapper. ¹³
In 2013, PG&E’s Mapping Department began publishing and tracking up-to-date performance metrics for as-built jobs. ¹⁴	

Type of Measure	Description of Measure
Records Accessibility Improvements	PG&E is scanning and making paper gas service records and distribution as-built records accessible electronically. ¹⁵
	In 2012, PG&E enabled personnel to access L&M tickets and relevant maps, and to record completion of these tickets, on tablets. ¹⁶
	In 2013, PG&E provided crews with mobile access to electronic gas distribution system maps, which allows them to submit mapping correction requests from mobile devices. ¹⁷
	In 2014, PG&E implemented an electronic A-Form, which allows personnel to initiate A-Forms and document leak repair work electronically. ¹⁸
Records Management and Controls	PG&E's Gas Operations launched CAP in October 2013. CAP aids the generation, receipt, and processing of mapping corrections. ¹⁹ PG&E published a procedure outlining the steps for addressing a gas map correction submitted through CAP. ²⁰
	PG&E published policies and standards strengthening the operational protocols for identifying, maintaining, organizing, and retaining records. ²¹
	In 2014, PG&E's Gas Operations established its initial vital records inventory and trained its workforce in records and information management. ²²
	In 2012, PG&E established a Gas Operations Records and Information Management (Gas RIM) team, which has eight full-time employees dedicated to the implementation and oversight of gas records management. ²³
	PG&E's Gas Operations first achieved PAS 55 and ISO 55001 certification in best practice asset management in May 2014, and continues to maintain its certification. ²⁴
	PG&E implemented API Recommended Practice 1173, which provides a framework for pipeline operators to develop and maintain a pipeline safety management system. In November 2015, Lloyd's Register assessed PG&E as being in compliance with the requirements of API 1173. ²⁵
	In 2011, PG&E's Gas Operations established a Quality Management (QM) group to conduct quality assurance reviews of work activities and key processes, validate adherence to new procedures and processes, and identify gaps and areas for improvement. ²⁶ QM group reviews include, for example, reviews of L&M work accuracy and completion, use of the Gas Pipeline Carrier Checklist, and adherence to the GDCC clearance procedures. ²⁷
	PG&E's Internal Audit organization provides expertise on auditing new and existing business processes, and it conducts audits of PG&E's recordkeeping practices and processes to identify areas for improvement. ²⁸

Type of Measure	Description of Measure
Gas Distribution Operations	PG&E created grassroots safety teams in different lines of business, including Gas Operations. At their monthly meetings, team members share enterprise-wide safety ideas and concerns from across lines of business.
	Between 2011-2013, PG&E developed the Gas Distribution Control Center (GDCC), a state-of-the art facility that monitors the gas system.
	In 2013, GDCC began using the Supervisory Control and Data Acquisition (SCADA) system to monitor the flow and pressure of gas, and is in the process of installing expanded SCADA points along the gas distribution system. The GDCC also began using the Tactical Analysis Mapping Integration (TAMI) tool.
	In 2014, PG&E implemented the Gas Distribution Clearance Process, which allows centralized monitoring and oversight of work that will affect gas flow in distribution mains.
	In 2014, PG&E created Super Crew, a pilot team that uses improved processes and technology to move non-emergency leaks through a work stream in a shorter time frame. ²⁹
	In 2014, PG&E deployed the Picarro Surveyor, a leak detection device that is approximately 1,000 times more sensitive to natural gas detection than other commercially available leak detection instrument technology. ³⁰
	In 2014, PG&E implemented the Super Gas Ops program, which aligns everyone involved in a Gas Operations construction or maintenance project. This improves work prioritization and creates more visibility into the status of work at every stage. ³¹
Operational Safety Measures	In 2014, PG&E created the Gas Pipeline Carrier Checklist to assist field personnel with identifying potential plastic inserts before starting work. ³²
	PG&E developed the Bolt-On Saddle Punch Tee, a tool that can be used to work on an inserted line without penetrating the plastic pipe. ³³

Type of Measure	Description of Measure
Reducing Risk of Excavation Damage	PG&E published and continuously updates a Damage Prevention Handbook containing all applicable work steps for locating and marking PG&E’s gas and electric facilities. ³⁴
	PG&E created a direct line of progression for its L&M organization and reorganized the operational structure in 2014. PG&E also expanded its L&M training program. ³⁵
	In 2012, PG&E created a stand-alone Operator Qualification (OQ) organization within Gas Operations to ensure worker competence when performing tasks in the field, including L&M employees and contractors. ³⁶
	In 2014, PG&E began using mobile technology and GD GIS to identify situations where personnel need to stand by when third parties are excavating or performing other work adjacent to PG&E’s critical facilities. ³⁷
	Through multiple leadership messages beginning in June 2014, PG&E established an expectation that all employees and contractors stop a job if a recordkeeping inconsistency is discovered. ³⁸
	In 2014, PG&E rolled out targeted public awareness programs with the goal of reducing dig-ins by educating homeowners and contractors regarding safe excavation practices, including the Gold Shovel, Habitual Offender, and DiRT programs. ³⁹
	In March 2015, PG&E developed a Pre-Dig Verification Form for use by its general construction workforce to validate that the site is ready for excavation and that the assets the crew is working on match PG&E’s records. ⁴⁰

¹ See Ex. 5, Attachment W014 (PG&E’s Response to SED Data Request No. 114); *id.*, Attachment W018 (PG&E’s Response to SED Data Request No. 29); *see also* Ex. 4 at 2-5:7 to 2-22:26 (PG&E Reply Testimony, Singh); *id.* at 3-5:15 to 3-23:20 (PG&E Reply Testimony, Higgins); *id.* at 4-6:16 to 4-22:23 (PG&E Reply Testimony, Trevino); *id.* at 5-1:25 to 5-39:13 (PG&E Reply Testimony, Singh).

² Ex. 4 at 2-11:1-33 (PG&E Reply Testimony, Singh); *id.* at 4-7:14-25 (PG&E Reply Testimony, Trevino); *id.* at 5-37:17 to 5-38:3 (PG&E Reply Testimony, Singh). PWA evaluated this as an “innovative practice.” Ex. 1 at 59 tbl.9 (PWA Report).

³ Ex. 4 at 5-7:8-17 (PG&E Reply Testimony, Singh).

⁴ *Id.* at 5-5:21 to 5-7:20 (PG&E Reply Testimony, Singh); *id.* at 5-13:17 to 5-14:5 (PG&E Reply Testimony, Singh); Ex. 7, Attachment W091 (Utility Procedure TD-9500P-16, Deactivation and/or Retirement of Underground Gas Facilities).

⁵ Ex. 4 at 2-19:12-23 (PG&E Reply Testimony, Singh); *id.* at 4-20:16-26 (PG&E Reply Testimony, Trevino). PWA evaluated this as an “innovative practice.” Ex. 1 at 59 tbl.9 (PWA Report).

⁶ Ex. 4 at 2-14:8-29 (PG&E Reply Testimony, Singh); *id.* at 4-7:26-31, 4-11:29 to 4-12:3 (PG&E Reply Testimony, Trevino).

⁷ *Id.* at 2-14:32 to 2-15:23 (PG&E Reply Testimony, Singh).

⁸ *Id.* at 2-20:21 to 2-21:3 (PG&E Reply Testimony, Singh); *id.* at 4-20:16 to 4-21:27 (PG&E Reply Testimony, Trevino). PWA evaluated this as a “best practice.” Ex. 1 at 61 tbl.9 (PWA Report).

-
- ⁹ Ex. 4 at 2-20:3-13 (PG&E Reply Testimony, Singh); *id.* at 4-15:16 to 4-16:17 (PG&E Reply Testimony, Trevino); *id.* at 5-11:17-24 (PG&E Reply Testimony, Singh). PWA evaluated this as an “innovative practice.” Ex. 1 at 61 tbl.9 (PWA Report).
- ¹⁰ Ex. 4 at 2-20:21 to 2-21:3 (PG&E Reply Testimony, Singh); *id.* at 4-20:16 to 4-21:27 (PG&E Reply Testimony, Trevino).
- ¹¹ *Id.* at 4-9:3-14 (PG&E Reply Testimony, Trevino); *id.* at 5-12:20 to 5-13:9 (PG&E Reply Testimony, Singh); Ex. 5, Attachment W017 (TD-4461P-20-F01, Checklist for Distribution Mains and Services As-Built Packages); Ex. 7, Attachment W080 (TD-4461M, Rev. 0, As-Built Drawing Handbook).
- ¹² Ex. 4 at 4-8:24 to 4-9:2, 4-10:13 to 4-11:27 (PG&E Reply Testimony, Trevino).
- ¹³ *Id.* at 4-8:2-13 (PG&E Reply Testimony, Trevino).
- ¹⁴ *Id.* at 4-16:23 to 4-17:4 (PG&E Reply Testimony, Trevino). PWA evaluated this as an “innovative practice.” Ex. 1 at 60 tbl.9 (PWA Report).
- ¹⁵ Plat maps were converted into GD GIS, paper GSRs have been scanned and are being entered into GD GIS, and historic as-builts have been scanned and will be made available electronically. Ex. 4 at 2-11:1-11 (PG&E Reply Testimony, Singh). PWA evaluated this as a “best practice.” Ex. 1 at 63 tbl.9 (PWA Report).
- ¹⁶ Ex. 4 at 3-12:11 to 3-13:12 (PG&E Reply Testimony, Higgins); *id.* at 2-22:11-26 (PG&E Reply Testimony, Singh). PWA evaluated this as a “best practice.” Ex. 1 at 62 tbl.9 (PWA Report).
- ¹⁷ Ex. 4 at 2-13:10 to 2-14:6, 2-15:24 to 2-16:17 (PG&E Reply Testimony, Singh); *id.* at 3-12:11 to 3-13:12 (PG&E Reply Testimony, Higgins). PWA evaluated this as a “best practice.” Ex. 1 at 62 tbl.9 (PWA Report).
- ¹⁸ Ex. 4 at 2-22:11-26 (PG&E Reply Testimony, Singh); *id.* at 3-6:27 to 3-7:21 (PG&E Reply Testimony, Higgins). PWA evaluated this as an “innovative practice.” Ex. 1 at 61-62 tbl.9 (PWA Report).
- ¹⁹ Ex. 4 at 4-5:22 to 4-6:15 (PG&E Reply Testimony, Trevino); *id.* at 5-22:22-28 (PG&E Reply Testimony, Singh). PWA evaluated this as an “innovative practice.” Ex. 1 at 63 tbl.9 (PWA Report).
- ²⁰ Ex. 4 at 5-25:14-26 (PG&E Reply Testimony, Singh); Ex. 6, Attachment W029 (Utility Procedure TD-4460P-11, Rev. 0, Gas Map Corrections).
- ²¹ *Id.* at 2-2:16-27, 2-5:17 to 2-6:2 (PG&E Reply Testimony, Singh); Ex. 5, Attachment W008 (Utility Policy TD-01, Rev. 1, Gas Asset Management); *id.*, Attachment W010 (Utility Standard TD-4016S, Rev. 1, Gas Operations Records and Information Management); *id.* at Attachment W011 (Utility Standard TD-4017S, Rev. 0, Gas Operations Vital Records Management).
- ²² Ex. 4 at 2-6:3 to 2-7:2 (PG&E Reply Testimony, Singh).
- ²³ *Id.* at 2-7:3-27 (PG&E Reply Testimony, Singh). A Gas RIM Coordinator Network of approximately 120 employees across 152 field offices support the Gas RIM Team. *Id.*
- ²⁴ *Id.* at 1-21:5 to 1-23:4 (PG&E Reply Testimony, Howe); *id.* at 2-8: 12-25 (PG&E Reply Testimony, Singh). PWA evaluated this as an “innovative practice.” Ex. 1 at 64 tbl.9 (PWA Report).
- ²⁵ 1/19/16 Tr. at 34:25 to 35:15 (SED/PWA); 1/20/16 Tr. at 183:26 to 184:13 (PG&E/Howe); Ex. 4 at 1-18:10 to 1-19:15 (PG&E Reply Testimony, Howe); Ex. 12 (Lloyd’s Register Pipeline Safety Management System Certificate of Compliance).
- ²⁶ Ex. 4 at 5-32:5-23 (PG&E Reply Testimony, Singh). PWA evaluated this as a “best practice.” Ex. 1 at 64-65 tbl.9 (PWA Report).
- ²⁷ Ex. 4 at 3-16:31 to 3-17:22 (PG&E Reply Testimony, Higgins); *id.* at 5-34:1-18 (PG&E Reply Testimony, Singh).
- ²⁸ *Id.* at 3-22:22 to 3-23:5 (PG&E Reply Testimony, Higgins); *id.* at 5-34:28 to 5-35:17 (PG&E Reply Testimony, Singh).
- ²⁹ *Id.* at 3-5:25 to 3-7:21 (PG&E Reply Testimony, Higgins).
- ³⁰ *Id.* at 3-5:30 to 3-6:26 (PG&E Reply Testimony, Higgins).

-
- ³¹ *Id.* at 3-7:23 to 3-8:19 (PG&E Reply Testimony, Higgins).
- ³² Ex. 4 at 3-4:14 to 3-5:8 (PG&E Reply Testimony, Higgins); *id.* at 3-28:14 to 3-29:13 (PG&E Reply Testimony, Higgins) *id.* at 5-8:21 to 5-9:22 (PG&E Reply Testimony, Singh); Ex. 5, Attachment W015 (Notification of Abnormal or Emergency Operating Conditions, Rev. 1, Gas Operations JSSA & Tailboard Briefing). PWA identified this as an “effective backstop” measure. Ex. 1 at 65 tbl.9 (PWA Report).
- ³³ Ex. 4 at 5-10:12 to 5-11:15 (PG&E Reply Testimony, Singh). PWA identified this as a “very useful backstop” measure. Ex. 1 at 68:9-13 (PWA Report).
- ³⁴ *Id.* at 3-12:11 to 3-13:12 (PG&E Reply Testimony, Higgins). Ex. 5, Attachment W022 (TD-5811M, Rev. 1, Damage Prevention Handbook). PWA evaluated this as an “innovative practice.” Ex. 1 at 65 tbl.9 (PWA Report).
- ³⁵ Ex. 4 at 3-11:2 to 3-12:9; 3-15:22 to 3-16:30 (PG&E Reply Testimony, Higgins).
- ³⁶ *Id.* at 3-16:12-30 (PG&E Reply Testimony, Higgins).
- ³⁷ Ex. 4 at 3-12:11 to 3-13:12 (PG&E Reply Testimony, Higgins). PWA evaluated this as a “best practice.” Ex. 1 at 63 tbl.9 (PWA Report).
- ³⁸ Ex. 4 at 3-3:5 to 3-5:8 (PG&E Reply Testimony, Higgins). PWA evaluated this as an “innovative practice.” Ex. 1 at 66-67 tbl.9 (PWA Report).
- ³⁹ Ex. 4 at 3-20:5 to 3-21:27 (PG&E Reply Testimony, Higgins). PWA evaluated the Gold Shovel and Habitual Offender programs as “best practice.” Ex. 1 at 66 tbl.9 (PWA Report); Ex. 6, Attachment W036 (Utility Procedure TD-5805P-02, Rev. 0, Gold Shovel Standard Damage Prevention Program Administration); *id.*, Attachment W037 (Utility Procedure TD-5805P-01, Rev. 0, Habitual Offender Damage Prevention Program Administration).
- ⁴⁰ Ex. 4 at 3-21:28 to 3-22:19 (PG&E Reply Testimony, Higgins). Ex. 6, Attachment W038 (Pre-Dig Verification Form, Rev. 4); Ex. 10, Attachment W039 (PG&E Errata to Pre-Dig Verification Form, Rev. 5).

APPENDIX B

PG&E’s Responses to Proposed Remedial Measures

PWA’S RECOMMENDATIONS ¹		
Proposed Remedial Measure	PG&E’s Response	PG&E’s Alternative Proposal
<p>1. Plastic Inserts and Stubs: PWA recommends that PG&E examine the costs and benefits associated with undertaking a systematic identification and correction effort for unmapped plastic inserts and stubs, relying on the experiences of other utilities in dealing with these issues.²</p>	<p>PG&E has agreed to conduct benchmarking analyses to identify industry best practices in addressing unmapped stubs and plastic inserts, after which it will evaluate which of these best practices can be implemented at PG&E.³</p> <p>Additionally, PG&E has already utilized new technology platforms and instituted multiple ongoing initiatives involving the use of analytical tools to identify and investigate potential unmapped assets and, where appropriate, proactively correct the related maps and records.⁴</p> <p>Moreover, PG&E has implemented several backstop measures to reduce the potential risk of incidents involving unmapped assets. For example, PG&E created a Gas Carrier Pipe Checklist to verify the existence of potential plastic inserts in the field prior to conducting work, which PWA recognizes as “an effective backstop approach to PG&E’s unmapped or unrecorded plastic inserted lines.”⁵ PG&E also developed a process to use a Bolt on Saddle Punch Tee, a device that can be used to verify the existence of inserted plastic without penetrating the gas carrier pipe, which is described by PWA as a “very useful backstop measure.”⁶ PG&E also has been actively investigating new advanced technologies for detecting such unmapped assets.⁷</p> <p>These initiatives demonstrate that PG&E is taking a proactive approach to continue to enhance its maps and records.</p>	<p>None.</p>

¹ Ex. 1 at 75:25 to 76:29 (PWA Report).

² *Id.* at 75:25-32 (PWA Report).

³ Ex. 4 at 1-7 (PG&E Reply Testimony, Howe); *id.* at 5-6:13-17, 5-8:12-17, 5-11:25 to 5-12:13 (PG&E Reply Testimony, Singh); *id.* at 6-15:29 to 6-16:8 (PG&E Reply Testimony, Thierry).

⁴ PG&E is continuously looking for new methods to gather intelligence from its newly digitized data in GD GIS and also using CAP mapping correction notifications to detect evidence of potential unmapped stubs or inserts. PG&E OB at 18-24; Ex. 4 at 4-16:18 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-25:14-26, 5-26:31 to 5-27:22 (PG&E Reply Testimony, Singh).

⁵ Ex. 1 at 65 tbl.9 (PWA Report); Ex. 4 at 5-8:21 to 5-10:8 (PG&E Reply Testimony, Singh).

⁶ PG&E OB at A-3, A-6 n.33; Ex. 1 at 68:9-13 (PWA Report); Ex. 4 at 5-10:12 to 5-11:15 (PG&E Reply Testimony, Singh).

PWA'S RECOMMENDATIONS¹

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>2. Stub Removal: PWA recommends that PG&E, considering risk tradeoffs, reexamine more aggressively eliminating existing stubs.⁸</p>	<p>Though this recommendation does not implicate recordkeeping issues, PG&E already has a policy in place for systematically identifying and, where appropriate, removing stubs.⁹ To assist the tracking and monitoring of potential stubs for removal, PG&E will use data captured from GSRs that have been integrated into GD GIS to create a centralized database of gas service stubs.¹⁰ PWA acknowledges that this is the type of stub removal program that it considers to be proactive.¹¹ In addition, PG&E is researching industry best practices regarding mapped stubs, as noted above.¹² Following the benchmarking analyses, PG&E will evaluate which of these best practices can be implemented at PG&E to potentially more aggressively eliminate stubs.¹³</p> <p>Moreover, PG&E's backstop measures, such as the Quality Management Program, and ongoing improvements in training and procedures for locate and mark crews, reduce the likelihood of existing unmapped stubs resulting in potential significant incidents.¹⁴</p>	<p>None.</p>

⁷ For example, PG&E initiated an industry R&D project with the Gas Technology Institute in collaboration with other gas distribution system operators to investigate commercially available technologies to detect potential inserted plastic pipe in gas distribution steel lines. This project tested several possible detection methods in the laboratory, but none have proven feasible in the field. PG&E has also been supporting the efforts of a start-up company that is developing ultrasonic means that may identify potential plastic inserts, demonstrating PG&E's continued commitment to identifying and developing new technologies that further build upon PG&E's current methods and procedures. PG&E OB at 49, 56, A-3; Ex. 4 at 5-11:27 to 5-12:13 (PG&E Reply Testimony, Singh).

⁸ Ex. 1 at 75:33-36 (PWA Report).

⁹ PG&E currently monitors and, where appropriate, removes mapped stubs that are not deemed "useful." To assist in this endeavor, on June 1, 2012, PG&E published a revised procedure that outlines the steps for monitoring and removing stub services. Ex. 4 at 5-6:21 to 5-7:7 (PG&E Reply Testimony, Singh); Ex. 7, Attachment W091 (Utility Procedure TD-9500P-16, Rev. 1, Deactivation and/or Retirement of Underground Gas Facilities).

¹⁰ PG&E OB at 18, A-1; Ex. 4 at 5-7:8-10 (PG&E Reply Testimony, Singh).

¹¹ Ex. 1 at 59 tbl.9 (PWA Report); Ex. 7, Attachment W095 at W095.007 (SED's First Responses to PG&E's Data Requests Sets 2 and 3) (stating that a formal stub program to eliminate stubs would be considered proactive).

¹² Ex. 4 at 1-7 (PG&E Reply Testimony, Howe).

¹³ *Id.* at 6-15:31 to 6-16:8 (PG&E Reply Testimony, Thierry).

¹⁴ PG&E OB at 16-17, 26-27, A-1 to A-2; Ex. 4 at 3-12:11 to 3-13:2, 3-16:1-30, 3-22:1-19 (PG&E Reply Testimony, Higgins); *id.* at 5-32:5-12, 5-33:12-22 (PG&E Reply Testimony, Singh).

PWA'S RECOMMENDATIONS¹

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>3. MAOP: PWA recommends that PG&E assess whether the method it used for setting the MAOP for some of its distribution systems creates additional risk and, if so, propose measures to address it. It also recommends that, when PG&E assesses what distribution systems to prioritize for replacement, the Company take into account the method by which it set MAOP for that system.¹⁵</p>	<p>The parties agree there is no basis to conclude that the method PG&E used for setting MAOP on the distribution systems at issue in this proceeding creates any safety risk.¹⁶ Nevertheless, in light of PWA's recommendation, PG&E committed to comparing the leak survey results for the approximately 243 systems with MAOP set using the alternative method against PG&E's other distribution systems to determine whether additional measures were necessary.¹⁷ PG&E has completed the MAOP risk analysis suggested in SED's proposed remedy (h) and proposes to update that analysis once PG&E has completed the MAOP review identified in SED (g).</p>	<p>None.</p>
<p>4. Internal Audit: PWA recommends that the CPUC take advantage of the insights PG&E has gleaned from its internal audit process into potential soft spots in the massive change effort being undertaken by PG&E to help focus its inspections, perhaps on the adequacy of the action plan given the internal audit findings on the effectiveness of implementation, and on the impact of corrective actions.¹⁸</p>	<p>While this is not a recommendation for PG&E, PG&E supports this recommendation.¹⁹ PG&E's Internal Auditing group (IA) performs audits to evaluate the effectiveness of controls on new and existing business processes, which allows management to then address any control gaps and check whether the processes are being implemented effectively.²⁰ As a reflection of the value PG&E places on its internal audit process, a Risk and Compliance Committee comprised of senior management is responsible for ensuring that corrective actions are implemented following an internal audit.²¹ PWA observed that, based on its review of IA reports and follow-up action plans, "PG&E management is making good use of these processes to monitor the impact . . . of [] its improvement programs."²²</p>	<p>None.</p>

¹⁵ Ex. 1 at 75:37 to 76:2 (PWA Report).

¹⁶ PG&E OB at 56-62. PG&E's distribution systems operate at considerably less than 20 percent of their maximum potential stress levels and accordingly operate with a significant margin of safety. *Id.* at 61. Moreover, these systems have been subjected to maintenance and operations requirements in accordance with the federal and state safety regulations. *Id.*

¹⁷ Ex. 4 at 5-21:4-20 (PG&E Reply Testimony, Singh).

¹⁸ Ex. 1 at 76:3-9 (PWA Report).

¹⁹ Ex. 4 at 1-8 (PG&E Reply Testimony, Howe).

²⁰ *Id.* at 5-22:16-19 (PG&E Reply Testimony, Singh).

²¹ Ex. 1 at 76:5-6 (PWA Report); Ex. 4 at 1-8 (PG&E Reply Testimony, Howe); *id.* at 3-23:3-20 (PG&E Reply Testimony, Higgins).

PWA'S RECOMMENDATIONS¹

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>5. Plastic Inserts: PWA recommends that SED expand its practice of incorporating into its inspections an investigation of whether plastic pipe has been inserted in existing steel lines. PWA recommends that SED focus on the results of major maintenance activities undertaken subsequent to PG&E's full implementation of GD GIS and its associated practices and procedures.²³</p>	<p>While this is not a recommendation for PG&E, PG&E supports this recommendation and looks forward to cooperating with SED's efforts to identify unmapped plastic inserts, as noted above.²⁴ See PG&E's Response to PWA's Recommendation 1, <i>supra</i> p. C-1.</p>	<p>None.</p>
<p>6. Causal Analysis: PWA recommends that PG&E consider reexamining both how it defines "root cause" and how it integrates corrective actions related to those root causes into existing management practices.²⁵</p>	<p>PG&E has already followed this recommendation. In response to PWA's recommendation, PG&E reexamined its existing policy for causal analysis, and it is substantially identical to the policy that PWA recommends; PG&E's causal evaluation policies and procedures utilize a definition of "causal evaluation" that incorporates the objectives of root cause analysis that were outlined by PWA.²⁶</p>	<p>None.</p>

²² Ex. 1 at 75:3-6 (PWA Report).

²³ *Id.* at 76:10-13 (PWA Report).

²⁴ PG&E OB at 19-20, A-3; Ex. 4 at 1-8 (PG&E Reply Testimony, Howe).

²⁵ Ex. 1 at 76:14-29 (PWA Report).

²⁶ See Ex. 4 at 1-8 (PG&E Reply Testimony, Howe); *id.* at 5-28:26 to 5-31:10 (PG&E Reply Testimony, Singh). PG&E's causal evaluation standard defines a causal evaluation as "a structured process used to determine, document and communicate the cause or reason why an incident, issue or error occurred. [Causal evaluations] are necessary to identify the cause of the incident, issue or error, to prevent or minimize the probability of recurrence and to apply continuous improvement." Ex. 7, Attachment W114 at W114.001 (Utility Standard GOV-6102S, Enterprise Causal Evaluation). This definition incorporates the "objectives" of the root cause analysis outlined by PWA, as the Standard requires the identification of the cause and contributing factors, corrective actions, and lessons learned that will inform continuous improvement. Ex. 4 at 5-30:26 to 5-31:10 (PG&E Reply Testimony, Singh).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>a. Systemic Review of Records: PG&E should conduct a systemic review of its records to determine if there are other categories of missing records of the same magnitude as the missing De Anza records. Within 90 days of a final Commission decision in this matter, PG&E should file a report that identifies all of the categories of missing records for its gas distribution system identified in this review and an assessment of how the records were lost.</p>	<p>PG&E acknowledges that it does not have perfect records. Like other utility companies, PG&E faces challenges with records that in many instances date back many decades, particularly given that PG&E is the product of hundreds of acquisitions that started in the late 19th century.²⁸</p> <p>SED already has requested that PG&E identify known missing document types during discovery. In response to this data request, PG&E explained that some missing or incomplete information may exist currently or may have existed at some time in the past in nearly every category of PG&E's gas distribution asset records, and in particular, through its due diligence efforts, identified the De Anza records and the MAOP records.²⁹ Thus, PG&E interprets this proposed remedy as seeking the identification of <i>additional</i> categories of records that have not already been described in this proceeding.</p> <p>SED's proposed remedy is exceedingly broad: It directs PG&E to conduct a systemic review to identify all categories of missing records, without any recommendation on how PG&E would conduct such a review of millions of records. Moreover, it directs PG&E to do so and to file a report, within 90 days of a Commission decision.</p> <p>This remedy does not consider the fact that PG&E has embarked on an ambitious project to digitize all its distribution records, and in doing so, has undertaken a number of initiatives to identify potential gaps in its records during the migration of asset data to electronic databases such as GD GIS.³⁰ These efforts—which are in line with PG&E's long-term efforts to continue to enhance its records—take years, not days.</p>	<p>PG&E shall:</p> <p>(1) Define activities to develop an extent of condition plan for potential missing GSRs and as-built records for gas distribution mains within 90 days of a Commission decision.</p> <p>(2) Develop an associated extent of condition report based on item (1) with recommended actions within 90 days of decision.</p>

²⁷ SED OB at 94-96.

²⁸ Ex. 4 at 1-2:13, 1-10:23 to 1-15:9 (PG&E Reply Testimony, Howe).

²⁹ See, e.g., Ex. 33 (PG&E's Supplemental Response No. 1 to SED Data Request No. 25).

³⁰ PG&E OB at 19, A-1; Ex. 4 at 2-19:3 to 2-22:26 (PG&E Reply Testimony, Singh).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p><i>(continued)</i></p>	<p>This proposed remedy, as well as proposals (b) and (c) below, is far broader than the six PWA recommendations or SED's proposed remedies (d), (e), (g), and (h), which are tailored to address the issues directly raised in this proceeding. As described above, PG&E has already agreed to implement PWA's recommendations. PG&E cannot realistically implement numerous broad-based programs all at once to search for all missing records or missing assets; instead, it should allocate its focus to prioritize measures that will most enhance its system safety. Thus, while PG&E agrees that having perfect records is an aspirational goal, it respectfully disagrees with this remedy as drafted.</p> <p>Rather than adopting a broad, unspecified remedy to identify all categories of missing records, PG&E proposes an alternative that focuses on efforts not yet implemented that would continue to improve the Company's distribution records and enhance safety.</p> <p>It is undisputed that PG&E's primary distribution "records" consist of: (1) plat maps; (2) Gas Service Records (GSRs); (3) A Forms; and (4) as-built records for gas distribution mains.³¹ PG&E's response therefore addresses each of these types of records:</p> <p><u>Plat Maps</u>: As part of the process of converting PG&E's existing distribution asset data from MET to GD GIS, approximately 21,000 individual plat maps were migrated to GD GIS as one continuous map for its entire system.³² During this conversion process, anomalies in the data being converted—including differences in the descriptions of assets mapped across contiguous plat maps—were automatically flagged through the PAR process, which is a process set up to ensure that any such discrepancies are investigated and resolved.³³ PWA evaluated the PAR process as an "innovative practice."³⁴</p>	

³¹ Ex. 4 at 2-10:28-31 (PG&E Reply Testimony, Singh).

³² *Id.* at 2-13:18-21 (PG&E Reply Testimony, Singh).

³³ PG&E OB at 19, A-1; Ex. 4 at 2-19:6-23 (PG&E Reply Testimony, Singh).

³⁴ Ex. 1 at 59 tbl.9 (PWA Report).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p><i>(continued)</i></p>	<p><u>As-Built Records</u>: As a result of the Gas Distribution Mains As-Built Digitization initiative that began in 2015 and is projected to be completed in 2017, nearly 10 million historic paper as-built records will be scanned and made available electronically.³⁵ Once all of these records are scanned, PG&E will be able to explore the feasibility of using analytics to identify potential missing as-built records for gas distribution mains, if any.</p> <p><u>A Forms</u>: A Forms are used to document leak information and to determine pipe replacements. PG&E's mappers primarily use GSRs to perform mapping updates.³⁶ Since 1970, PG&E captured leak repair data from A Forms in electronic databases,³⁷ and SED has presented no evidence to suggest that this procedure was not followed. PG&E is currently undertaking efforts to analyze this electronic A Form data to identify any potential unmapped plastic inserts.³⁸ This type of practical analytics will yield far more dividends in improving PG&E's distribution safety than SED's broad directive.</p> <p><u>GSRs</u>: PG&E completed scanning more than 6 million of its paper GSR records by 2015. The Company is in the process of uploading and entering these scanned GSRs into GD GIS so that they will be accessible electronically. Once the data has been entered into GD GIS, PG&E believes it could leverage analytic tools to identify potential missing GSRs, if any.</p>	

³⁵ PG&E OB at A-2; Ex. 4 at 2-11:7-9 (PG&E Reply Testimony, Singh).

³⁶ PG&E OB at 25-26, A-1; 1/21/16 Tr. at 412:7 to 413:5 (PG&E/Trevino).

³⁷ 1/21/16 Tr. at 468:24 to 469:10 (PG&E/Singh).

³⁸ PG&E OB at 25-26; Ex. 4 at 4-15:18 to 4-16:17 (PG&E Reply Testimony, Trevino); *id.* at 5-11:17-24 (PG&E Reply Testimony, Singh).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>b. Report on Systemic Review: Within 90 days of a final Commission decision in this matter, PG&E should file a report based on a systemic review of its distribution system to ensure that all of its facilities are accounted for. PG&E should leverage information gathered from its field personnel and various sources, such as its Corrective Action Program (CAP), to determine any negative trends that impact the completeness and accuracy of its records and maps.</p>	<p>This proposed remedy is exceedingly broad as it seeks a systemic review to ensure that <i>all</i> of these facilities are accounted for, and to do so within 90 days of final Commission decision. No operator can prove with certainty—aside from taking extreme actions, such as digging up every inch of underground assets—that it has accounted for each and every facility. SED's own expert, PWA, acknowledges that no operator has been able to do so.³⁹</p> <p>This proposed remedy also does not consider the fact that PG&E has implemented numerous initiatives to continuously improve its records consistent with regulatory requirements.⁴⁰ PG&E is also continuously improving its damage prevention program and L&M personnel have many means to locate; they do not rely solely on maps.⁴¹</p> <p>As discussed in response to proposed remedy (a), this type of blanket directive is far less effective in improving safety than measures—like the Recommendations proposed by PWA or SED's Proposed Remedies (d), (e), (g), and (h)—that directly address the issues raised in this proceeding. It would take away focus from other critical work that is more effective at risk reduction. Thus, PG&E respectfully disagrees with this remedy as drafted.</p>	<p>PG&E shall:</p> <p>(1) Complete the planned effort to compare existing PG&E meter data in CC&B to GD GIS, along with relevant ancillary data such as aerial imagery, where appropriate, by December 30, 2016. PG&E will subsequently update GD GIS, as required.</p> <p>(2) Conduct a trending analysis of CAP mapping correction notifications to determine any potential trends in the submission of the type of map updates between October 2013 and the time of a Commission decision. PG&E shall file a report on the trending analysis within 90 days of a Commission decision.</p>

³⁹ 1/19/16 Tr. at 44:5-15 (SED/PWA) (“I don’t know a pipeline operator who has perfect maps and records.”).

⁴⁰ PG&E OB at A-1 to A-2 (listing records-related initiatives undertaken by PG&E).

⁴¹ Ex. 4 at 3-10:21 to 3-20:3 (PG&E Reply Testimony, Higgins).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p><i>(continued)</i></p>	<p>PG&E proposes the following alternative, specific remedies that continue to improve its gas distribution records:</p> <p><u>Comparing CC&B to GD GIS:</u> PG&E has already implemented measures to identify potential missing services. For example, as part of the process of validating its gas distribution asset data, PG&E compared its distribution asset maps in MET with the customer meter locations included in its Customer Care Billing System (CC&B) to identify assets not included on its maps.⁴² This effort was completed in 2013.⁴³ PWA recognized this as a best practice.⁴⁴</p> <p>PG&E is undertaking an additional effort to compare CC&B to GD GIS. A cross-check of these databases against each other verifies that customer premises have corresponding mapped services and mains within GD GIS.⁴⁵</p> <p><u>Trending Analysis:</u> PG&E agrees to conduct a trending analysis of CAP mapping correction notifications to determine any potential trends in the submission of the type of map updates between October 2013 and the time of a Commission decision. PG&E shall file a report on the trending analysis within 90 days of a Commission decision.</p>	

⁴² PG&E OB at 20, A-1; Ex. 4 at 2-20:21 to 2-21:3 (PG&E Reply Testimony, Singh); *id.* at 4-21:4-12 (PG&E Reply Testimony, Trevino).

⁴³ Ex. 4 at 4-21:11-12 (PG&E Reply Testimony, Trevino).

⁴⁴ Ex. 1 at 61 tbl.9 (PWA Report).

⁴⁵ Ex. 4 at 4-21:13-20 (PG&E Reply Testimony, Trevino).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>c. GIS Validation Review: PG&E should conduct a review of its GD GIS system to validate the data using all available records to ensure completeness and accuracy of data in GD GIS. Within 90 days of a final Commission decision in this matter, PG&E should file a report presenting documentation of all aspects of this review.</p>	<p>PG&E respectfully disagrees with this proposed remedy because it is overly broad, redundant to SED's Proposed Remedy (a), and is redundant of the extensive efforts the Company has already undertaken to digitize its distribution records.</p> <p>Among many other things, this remedy could be interpreted to require a manual comparison of tens of millions of distribution records to GD GIS data to confirm that the information is correct in GD GIS. It would take away focus from other critical work that is more effective at risk reduction. <i>See supra</i> PG&E Reply Brief pp. 51-52.</p> <p>Since 2012, PG&E has been transitioning to electronic-based records systems and has been digitizing its Gas Distribution paper records as part of the Pathfinder Project. PG&E began deploying GD GIS in some of its divisions by late 2013 and, by August 2015, PG&E finished implementing GD GIS in all of its 18 divisions.⁴⁶</p> <p>As part of this effort, PG&E embarked on a number of measures to validate the data imported into GD GIS, including: implementation of GD GIS in the Pathfinder Project; conducting PAR analysis to identify potential anomalies in the conversion to GD GIS; comparing GD GIS to CC&B and to Google Earth; using SAP to inventory assets and track mapping updates in GD GIS; comparing SAP leak data to GD GIS to identify potentially unmapped plastic inserts; and scanning and making paper gas service records and distribution as-built records accessible electronically.⁴⁷</p> <p>Additionally, PG&E is continuously looking for new ways to use analytic tools to analyze the data from its newly digitized data in GD GIS.⁴⁸</p> <p>PG&E provided extensive discovery and testimony on these efforts. Neither PWA nor SED has taken issue with any of these efforts. Nor has SED or PWA articulated any specific recommendations not already implemented by PG&E to validate its GD GIS records. In fact, PWA recognized many of these efforts as best practices.</p> <p>This proposed remedy is duplicative to PG&E's ongoing efforts and PG&E believes it therefore is unnecessary.</p>	<p>Duplicative of SED's Proposed Remedy (a) and is redundant of the Company's extensive ongoing efforts to digitize its distribution records.</p>

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>d. Plastic Inserts: PG&E should evaluate the need for a proactive program to identify unknown plastic inserts in its distribution system. Within 90 days of a final Commission decision in this matter, PG&E should file a report describing the evaluation for program need, and the basis for why a proactive program is or is not needed. PG&E should also describe any additional measures it is taking to address the risk of unknown plastic inserts.</p>	<p>PG&E agrees with this proposal.</p> <p>As provided throughout PG&E's testimony, PG&E has already implemented several initiatives to address unmapped plastic inserts.⁴⁹ For example, PG&E is comparing GD GIS to SAP leak data to identify potential unmapped plastic inserts, and uses CAP mapping correction notifications to detect evidence of potential unmapped stubs or inserts.⁵⁰ PG&E also has been actively investigating new advanced technologies for detecting such unmapped assets.⁵¹ See PG&E's Response to PWA's Recommendation 1 for a more detailed discussion of these backstop measures, <i>supra</i> p. C-1. These initiatives demonstrate that PG&E is taking a proactive approach to improve its maps and records. In addition, PG&E has agreed to conduct benchmarking analyses to identify industry best practices in addressing potential unmapped plastic inserts.⁵²</p> <p>PG&E further agrees to submit a report within 90 days of a final Commission decision in this proceeding.</p>	<p>None.</p>

⁴⁶ The amount of records involved in this project was massive, reaching nearly three times the height of the Empire State Building if the paper records were stacked vertically, and the effort required coordination among multiple departments and across all divisions of Gas Operations. Ex. 4 at 5-37:17-29 (PG&E Reply Testimony, Singh).

⁴⁷ PG&E OB at 18-20, A-1.

⁴⁸ *Id.* at 18-24; Ex. 4 at 4-16:18 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-25:14-26, 5-26:31 to 5-27:22 (PG&E Reply Testimony, Singh).

⁴⁹ Ex. 4 at 1-7 (PG&E Reply Testimony, Howe); *id.* at 2-20:3-18 (PG&E Reply Testimony, Singh); *id.* at 4-15:16 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-8:1 to 5-12:13 (PG&E Reply Testimony, Singh); *id.* at 6-15:26 to 6-16:8 (PG&E Reply Testimony, Thierry).

⁵⁰ PG&E OB at 18-26; Ex. 4 at 2-11:1-5, 2-20:3-13, 2-22:6-9 (PG&E Reply Testimony, Singh); *id.* at 4-15:16 to 4-17:4 (PG&E Reply Testimony, Trevino); *id.* at 5-11:17 to 5-12:13 (PG&E Reply Testimony, Singh).

⁵¹ For example, PG&E initiated an industry R&D project with the Gas Technology Institute in collaboration with other gas distribution system operators to investigate commercially available technologies to detect potential inserted plastic pipe in gas distribution steel lines. This project tested several possible detection methods in the laboratory, but none have proven feasible in the field. PG&E has also been supporting the efforts of a start-up company that is developing ultrasonic means that may identify potential plastic inserts, demonstrating PG&E's continued commitment to identifying and developing new technologies that further build upon PG&E's current methods and procedures. PG&E OB at 56; Ex. 4 at 5-11:25 to 5-12:13 (PG&E Reply Testimony, Singh).

⁵² Ex. 4 at 1-7 (PG&E Reply Testimony, Howe); *id.* at 6-15:26 to 6-16:8 (PG&E Reply Testimony, Thierry).

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>e. Stub Identification: Within 90 days of a final Commission decision in this matter, PG&E should provide a report describing its policy of identification of stubs, and documenting a systemic effort to account for stubs.</p>	<p>PG&E agrees with this proposed remedy. <i>See also</i> PG&E's Response to PWA Recommendations #2, <i>supra</i>.</p>	<p>None.</p>
<p>f. Excavation Damage Prevention: PG&E should perform an analysis to determine causes of at-fault excavation damages of its distribution system. Within 90 days of a final Commission decision in this matter, PG&E should provide a report of its analysis, including measures to reduce the number of at-fault excavation damages caused by mapping and/or record inaccuracies in its gas distribution system.</p>	<p>PG&E currently performs such an analysis on a monthly basis. PG&E will use the most recent six-month data from the time of the Commission decision for this analysis and will identify any additional potentially required measures to reduce at-fault dig-ins. It will submit a report within 90 days.</p> <p>PG&E accurately marked 99.98% of the excavation requests it worked on between January and September 2015. At-fault dig-ins due to incorrect maps and records constitute a fraction of 0.02% of total dig-ins because the 0.02% figure includes dig-ins that resulted from factors other than imperfect maps or records, such as changed field conditions, or locate and mark operational errors unrelated to records.⁵³</p> <p>PG&E is committed to ongoing efforts to improve its gas distribution records and believes it could work with the CPUC directly to create objective measures of its progress in these ongoing efforts.</p> <p>PG&E is piloting a dedicated locating team for hard-to-locate facilities. This team integrates several functions (its members can locate, perform GPS surveys, and perform digs when necessary) and is provided with specialized training and an additional locating tool. The pilot includes pot-holing to validate locations, installation of radio frequency identification where appropriate, and map update requests.</p>	<p>(1) PG&E shall perform an analysis to determine causes of at-fault excavation damages of its distribution system and identify measures to reduce at-fault dig-ins and shall use the most recent six-month data from the time of the Commission decision for this analysis and submit a report within 90 days.</p> <p>(2) Based on the results of the dedicated locating team pilot, PG&E shall equip, at a minimum, two "difficult to locate" crews to perform location of facilities when traditional methods are unsuccessful.</p>

⁵³ PG&E OB at 13.

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>g. Distribution MAOP Identification: Within 90 days of a final Commission decision in this matter, PG&E should identify all of the facilities in its distribution system in which PG&E applied its alternative method of using post-1970 leak survey records to establish the MAOP. PG&E should provide a final list of these systems with the following data, at a minimum:</p> <ul style="list-style-type: none"> • Distribution line number, name, or nomenclature used by PG&E to identify the system • Location of the system – City and PG&E Division responsible for operations and maintenance • Operating Pressure • MAOP • Date installed • Date placed in service • Strength test information – date tested, test pressure, and duration • Material type • Size • Length • Copy of record/document used to establish the MAOP. 	<p>PG&E agrees to this proposed remedy and proposes alternatives with respect to date installed, date placed in service, and strength test information. Regarding date placed in service, PG&E may have difficulty establishing that date for some systems, so proposes instead to substitute date installed in those instances. With respect to strength test information, distribution facilities are not strength tested and thus that information is not available. However, they are leak (or pressure) tested, except for pipe installed prior to the establishment of state and federal code requirements. In those cases, leak test information was not recorded in the as-built documentation and may not be available. In addition, 49 C.F.R. § 192.517 requires an operator to retain leak test records for pipelines operating below 100 p.s.i. for only five years. PG&E agrees to provide any available leak test information, where applicable and available.</p>	<p>(1) Within 90 days of a final Commission decision in this matter, PG&E shall identify its facilities in its distribution system in which PG&E applied its alternative method of using post-1970 leak survey records to establish the MAOP. PG&E shall provide a final list of these systems with the following data:</p> <ul style="list-style-type: none"> • Distribution line number, name, or nomenclature used by PG&E to identify the system • Location of the system – City and PG&E Division responsible for operations and maintenance • Operating Pressure • MAOP • Material type • Size • Length • Copy of record/document used to establish the MAOP. <p>PG&E shall also provide the date placed in service. Where date placed in service information is not readily available, it will provide the date installed. PG&E shall also provide, where available, leak test information.</p> <p>(2) Based on the results of the record review in item (1), PG&E shall take additional steps to verify MAOP, as required, including pressure testing.</p>

SED'S PROPOSED REMEDIES²⁷

Proposed Remedial Measure	PG&E's Response	PG&E's Alternative Proposal
<p>h. <u>Distribution MAOP Risk</u> <u>Analysis:</u> PG&E should conduct a risk analysis and demonstrate its basis to conclude that the method it used for setting MAOP on the approximately 243 distribution systems do not create any additional safety risk. Along with the final list indicated above, within 90 days of a final Commission decision in this matter, PG&E should provide a report to the Commission describing the risk analysis performed, conclusions from that analysis, and any proposed remedial measures. SED reserves the right to review PG&E's report and submit a recommendation to the Commission.</p>	<p>PG&E agrees to this remedy. PG&E has completed the MAOP risk analysis suggested in SED's proposed remedy (h) and proposes to update that analysis once PG&E has completed the MAOP review identified in SED (g). PG&E agrees to provide a supplemental report, as necessary, for any additional distributions systems identified in SED's Proposed Remedy (g).</p>	<p>PG&E shall provide a supplemental report, as necessary, for any additional distributions systems identified in SED's Proposed Remedy (g).</p>

CARMEL'S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
<p>1. Executive bonuses: Executive bonuses should be tied to include safety goals. The Commission should order that PG&E propose an ambitious model to more closely link executive pay to safety goals and measures. The order should include that SED and Carmel work together to hire an executive compensation advisor to review and make recommendations to PG&E's proposal. PG&E should pay for the compensation advisor.</p>	<p>This proposed remedy is outside the scope of this proceeding. The relationship between executive compensation and PG&E's recordkeeping practices and resulting gas distribution system safety was not an issue raised in this proceeding. Moreover, the relationship between executive compensation and meeting safety goals is currently being addressed in other regulatory proceedings, such as PG&E's 2017 General Rate Case application, and should not be determined here.⁵⁵ This remedy, therefore, should be rejected.</p>	<p>Reject.</p>
<p>2. Safety and Leak Intervenor: The Commission should order the creation and the endowment of a safety and gas leak intervenor. This would be similar to the role of TURN, but an intervenor focused solely on issues of public safety relating to gas pipelines and gas leaks. Such an intervenor needs to be an independent voice, outside of the CPUC.</p>	<p>This proposed remedy is outside the scope of this proceeding and should be rejected. <i>See supra</i> PG&E Reply Brief, pp. 57-58.</p>	<p>Reject.</p>
<p>3. Safety and Leak Performance Incentives: The Commission should order that PG&E's authorized potential rate of return on capital be increased if PG&E's safety and leak record exceeds industry average. Conversely, PG&E's authorized potential rate of return on capital should be reduced if PG&E's safety and leak record is less than industry average. PG&E's safety record should include an analysis of its response time to gas leaks. This does not mean when PG&E gets there, it means when PG&E fixes the problem. In order to do this effectively, the Commission will need to set industry standards for measuring safety and require all gas utilities in the state to measure and report using these standards.</p>	<p>The relationship between monetary performance incentives and safety metrics is outside the scope of this proceeding, and is not supported by any evidence presented in this proceeding. Such a remedy would also constitute ratemaking.</p>	<p>Reject.</p>

⁵⁴ Carmel OB at 20-25.

⁵⁵ *See, e.g., Assigned Commissioner's Ruling and Scoping Memo, Application of Pac. Gas & Elec. Co. for Auth., Among Other Things, to Increase Rates and Charges for Elec. & Gas Serv. Effective on Jan. 1, 2017*, A. 15-09-001, at 7-8 (Dec. 1, 2015).

CARMEL’S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E’s Response	Proposed Ruling
<p>4. <u>Independent Review of PG&E’s Safety Culture</u>: The Commission should order an independent review to analyze PG&E’s business practices, policies, and corporate culture and how the utility prioritizes safety in its gas pipeline activities. PG&E’s safety protocols may look great on paper, but the law requires safe implementation. Carmel takes issue with the Exponent and “Lloyd’s of London” reports because they are purportedly “too cozy” with PG&E and their reports are too limited in scope or just scratch the surface of PG&E’s practices. They are commissioned and paid for by PG&E, creating an inherent conflict of interest. It is the implementation that gets overlooked in Lloyds and Exponent’s analyses. Carmel proposes that SED select the expert for an independent review to help keep them at arm’s length with its subject. PG&E should be ordered to pay for the review.</p>	<p>PG&E’s business practices, policies, and safety culture are currently being addressed in other regulatory proceedings, such as PG&E’s 2017 General Rate Case application, and should not be determined here.⁵⁶ Carmel’s assertion that Lloyd’s Register and Exponent are “too cozy” with PG&E is without basis. <i>See supra</i> PG&E Reply Brief, pp. 56-57.</p> <p>This remedy, therefore, should be rejected.</p>	<p>Reject.</p>
<p>5. <u>Finding that PG&E Caused the Release of Methane Gas</u>: The Commission’s decision should include a finding that PG&E caused methane, a greenhouse gas, to be released into the atmosphere as part of these six incidents and other leaks. Therefore, these are reportable events pursuant to the Global Warming Solutions Act of 2006. The Commission should confer with the California Air Resources Board about how to address such releases under the AB32 cap.</p>	<p>This proposed remedy is beyond the scope of this recordkeeping OII, and the broader issue is already being considered in the Commission’s Order Instituting Rulemaking to Adopt Rules and Procedures Governing Commission-Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leakage Consistent With Senate Bill 1371 (R. 15-01-008). It raises for the first time an issue for which Carmel has provided no notice or evidence from which to conclude that any incidents discussed in this OII were reportable under the Global Warming Solutions Act.</p> <p>This remedy, therefore, should be rejected.</p>	<p>Reject.</p>

⁵⁶ *See, e.g., id.*

CARMEL'S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
<p>6. Order Additional Safety Remedies: The Commission should include in its decision the following binding commitments by PG&E with respect to improving safety in its communities:</p> <ul style="list-style-type: none"> PG&E to immediately call 911 and otherwise engage first responders for any future, similar gas leaks like the one seen in Carmel; PG&E to have necessary safety equipment on trucks doing work for any reasonably foreseeable accidents that could be caused by such work; and PG&E to have relevant safety equipment on first responder trucks to remedy all but the most serious incidents. 	<p>Emergency response is beyond the scope of this proceeding and PG&E was not given notice of this issue so that evidence demonstrating PG&E's emergency response performance could be presented. PG&E paid a \$10.85 million fine in response to a citation alleging two violations related to the Carmel incident, for failing to equip its personnel with the tools necessary to stop the flow of gas and for failing to make the surrounding area safe despite signs of a possible leak.⁵⁷</p> <p>In any event, PG&E is already addressing emergency response concerns by developing enhanced work and emergency response procedures, including equipping all crews in the City of Carmel with emergency tools, providing first responder training, and piloting a new protocol for PG&E crews to work more closely with local first responders.⁵⁸</p> <p>This remedy, therefore, should be rejected.</p>	<p>Reject.</p>

⁵⁷ Resolution ALJ-323, *Resolves the Appeal of Pac. Gas & Elec. Co. from Citation ALJ-274 2014-11-001 Issued by the Safety & Enforcement Div.*, 2015 Cal. PUC LEXIS 757, at *1-2.

⁵⁸ See Letter from Kevin Knapp, PG&E Vice President of Transmission and Distribution Operations, to Elizaveta Malashenko, Deputy Director of SED at 2-3 (Sept, 8, 2014), available at <http://ci.carmel.ca.us/carmel/index.cfm/linkservid/F1FD02AB-3048-7B3D-C5189A2F6920D9BF>.

CARMEL’S PROPOSED REMEDIES⁵⁴

Proposed Remedial Measure	PG&E’s Response	Proposed Ruling
<p>7. Compensation to Carmel: PG&E should be ordered to pay Carmel for its damages associated with the March 3, 2014 blast. Carmel suffered direct costs through its emergency response efforts, its remediation and repair costs, its administrative time and effort, and its consulting and legal costs. It has also suffered indirect costs through lost “opportunity costs.” The explosion also caused indirect costs by damaging Carmel’s “brand” as a quiet, tranquil coastal town; a house explosion is not attractive to investment and tourism. The community of Carmel has been damaged as a result of the explosion. The explosion caused neighbors anxiety and they suffered loss of sleep due to the fear of what other unknowns exist underground.</p>	<p>In the context of an OII, the California Public Utilities Code authorizes the Commission to order penalties, fines and restitution as well as equitable remedies, but not to order damages.⁵⁹ Indeed, Carmel has identified no precedent for the Commission to order direct compensation to a private party or municipality in an OII, and PG&E is aware of none.⁶⁰ Carmel states that it will submit evidence of damages through a “separate, further briefing” at some unknown time, outside of the briefing schedule and testimony set in this proceeding.⁶¹ Carmel’s request should be rejected.</p>	<p>Reject.</p>
<p>8. Fines and Penalties Should Be Paid with Shareholder Money: PG&E shareholders should pay these penalties rather than ratepayers.</p>	<p><i>See supra</i> PG&E Reply Brief, pp. 53-55.</p>	

⁵⁹ Compare Cal. Pub. Util. Code § 2106 (stating that “[a]n action to recover for . . . loss, damage, or injury [caused by a public utility] may be brought in any court of competent jurisdiction”) with Cal. Pub. Util. Code § 2107 (granting the Commission the power to impose a penalty on any public utility that fails to comply with a state law or Commission order) and D. 15-04-024, 2015 Cal. PUC LEXIS 230, at *45-46 (finding that although the Commission is empowered to impose remedies outside of those available under section 2107, such additional remedies are limited to those equitable in nature); see also *Order Instituting Rulemaking on Regulations Relating to Passenger Carriers, Ridesharing, and New Online-Enabled Transp. Servs.*, D. 16-01-014, 2016 Cal. PUC LEXIS 22, at *90 (stating that “[t]he Commission has broad authority to impose *finis and penalties* on persons subject to the Commission’s jurisdiction”) (emphasis added).

⁶⁰ Carmel incorrectly argues that because the Commission has “exclusive jurisdiction” over the safety of PG&E’s distribution system, this proceeding is the “proper venue” for Carmel’s damages claims. Carmel OB at 24. Although “the Legislature has granted *regulatory* power to the PUC over the safety of gas pipelines,” *S. Cal. Gas Co. v. City of Vernon*, 41 Cal. App. 4th 209, 217 (1995) (emphasis added), the Commission is empowered to seek “penalties due the State” for violations of law, Cal. Pub. Util. Code § 2101, which are generally paid to the State’s General Fund. See Cal. Pub. Util. Code § 2104.5.

⁶¹ Carmel OB at 24.

TURN'S PROPOSED REMEDIES⁶²

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
<p>1. Transmission Recordkeeping OII Remedies (Transmission OII Remedies): The Commission should extend to gas distribution recordkeeping each of the 21 transmission recordkeeping remedies adopted by the Commission in D. 15-04-024 (see below).⁶³</p>	<p>As discussed in details below, many of the Transmission OII Remedies have been implemented for gas distribution in the course of implementing for Gas Transmission, and many of those are complete. Many relate to the details of implementing a Records and Information Management program which is not an issue in the evidentiary record of this proceeding.⁶⁴ Some of the remedies are clearly inapplicable to the gas distribution assets, such as those addressing salvaged pipe, which is not used in the gas distribution system. While a few of the remaining remedies relate exclusively to transmission, PG&E has adopted similar principles in its ongoing work to enhance gas distribution systems, processes, and procedures.</p> <p><i>See</i> Adopted Transmission Recordkeeping OII Remedies, <i>infra</i> pp. C-21 to C-36.</p>	<p>Unnecessary.</p>
<p>2. Plastic Inserts: The Commission should order PG&E to undertake proactive and systematic efforts to identify and correct in its maps and records all unmapped or inaccurately mapped records of plastic inserts in its distribution system and order this work to be completed within three years.</p>	<p>PG&E is agreeing to SED's Proposed Remedy (d) to evaluate the need for a proactive program to identify unknown plastic inserts in its distribution system. TURN's proposed remedy is duplicative and unnecessary. <i>See</i> PG&E's Response to SED's Proposed Remedy (d), <i>supra</i> p. C-11.</p>	<p>Duplicative of SED's Proposed Remedy (d).</p>
<p>3. Stubs: The Commission should order PG&E to undertake proactive and systematic efforts to identify and correct its maps and records of all unmapped or inaccurately mapped stubs in its distribution system and order this work to be completed within three years.</p>	<p>PG&E is agreeing to SED's Proposed Remedy (e) to document a systemic effort to account for stubs. TURN's proposed remedy is duplicative and unnecessary. <i>See</i> PG&E's Response to SED's Proposed Remedy (e), <i>supra</i> p. C-12.</p>	<p>Duplicative of SED's Proposed Remedy (e).</p>

⁶² TURN OB at App. A.

⁶³ *See Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. to Determine Violations of Pub. Util. Code Section 451, Gen. Order 112, & Other Applicable Standards, Laws, Rules & Regulations in Connection with the San Bruno Explosion & Fire on Sept. 9, 2010*, D. 15-04-024, 2015 Cal. PUC LEXIS 230 (Transmission Recordkeeping OII), at *417-42.

⁶⁴ *Id.* at *430-37, (Remedies 1, 3, 4, 5, 7, 8, 9, 10, 11, 15, 17).

TURN'S PROPOSED REMEDIES⁶²

Proposed Remedial Measure	PG&E's Response	Proposed Ruling
4. MAOP: The Commission should order PG&E to take the necessary steps to establish MAOP in compliance with applicable law and, within 90 days, to submit a compliance plan for Commission approval, via a Tier 3 advice letter.	PG&E is agreeing to SED's Proposed Remedy (g) and (h) to address MAOP issues. <i>See</i> PG&E's Response to SED Proposed Remedies (g) and (h), <i>supra</i> p. C-13 to C-14. TURN's proposal is duplicative and TURN has provided no evidence in the record to support this alternative proposal.	Duplicative of SED's Proposed Remedies (g) and (h).
5. Remedies to Be Paid By Shareholders: The Commission should order that costs incurred by PG&E related to any remedies ordered in the proceeding be paid by PG&E's shareholders and not be recovered from ratepayers.	<i>See supra</i> PG&E Reply Brief pp. 53-55. ⁶⁵	

⁶⁵ *See also* Ex. 4 at 1-25:15 to 1-26:2 (PG&E Reply Testimony, Howe).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>1. Level 3 Information Maturity Score: PG&E's gas transmission organization shall achieve at least a Level 3 information maturity score under the Generally Accepted Records Keeping Principles within three years.</p>	<p>PG&E's Gas Operations organization has already committed to using the Information Governance Maturity Model for records management developed by ARMA International to design a Gas RIM program in accordance with the recordkeeping and information management guidance in PAS 55 and ISO 55001.⁶⁸ As part of its efforts to achieve ARMA Level 3 maturity, in August 2015 PG&E began the electronic records portion of a multi-year records management initiative, with a focus on information controls and security.⁶⁹ The initiative is scheduled to be completed in 2018.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings.⁷⁰</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁶⁶ See D. 15-04-024, 2015 Cal. PUC LEXIS 230, at *417-42. For a report on the status of the implementation of these remedies, see Pacific Gas and Electric Co.'s Compliance Plan for Remedies Ordered by D.15-04-024, *Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016 (June 8, 2013), available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M152/K482/152482664.PDF>.

⁶⁷ This column provides the status of the implementation of the remedy, to the extent that PG&E undertook activities consistent with the intent of the remedy or as such a remedy was applied to the gas distribution systems in the Transmission Recordkeeping OII. "In Progress" indicates that the remedy is being implemented or is ongoing as part of the Transmission Recordkeeping OII. "Completed" indicates that the remedy has been implemented as to distribution activities through the Transmission Recordkeeping OII or that PG&E has implemented measures to address the intent of the remedy as part of its ongoing efforts to improve its distribution records and distribution system safety.

⁶⁸ Ex. 4 at 2-8:1-4 (PG&E Reply Testimony, Singh).

⁶⁹ Ex. 5, Attachment W014 at W014.003 (PG&E's Response to SED Data Request No. 114).

⁷⁰ PG&E requested permission to remove forecast costs from PG&E's 2015 Gas Transmission and Storage (GT&S) Rate Case (*Application of Pac. Gas & Elec. Co. Proposing Cost of Serv. & Rates for Gas Transmission & Storage Services for the Period 2015-2017*, A. 13-12-012) to implement remedies associated with the Transmission Recordkeeping OII (*Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016). See 2015 GT&S Rate Case Hearing Ex. 137 (Supplemental Testimony with Errata – Remedies, Chapter 24: Impact of Remedies on GT&S Forecast), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=346551>; 2015 GT&S Rate Case Hearing Ex. 138 (Workpapers Errata (Clean) Supporting Chapter 24), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=346552>. PG&E's supplemental testimony in the 2017 General Rate Case (GRC) (*Application of Pac. Gas & Elec. Co. for Auth., Among Other Things, to Increase Rates & Charges for Elec. & Gas Service Effective on Jan. 1, 2017*, A. 15-09-001) discusses the forecast costs to implement the remedies that are included in PG&E's gas distribution revenues. See 2017 GRC Exhibit PG&E-14 (Impact of Gas Transmission Remedies on GRC Forecast and Update to Enterprise Records and Information Management Program), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=352511>; 2017 GRC Exhibit PG&E-14 (Workpapers Supporting Chapter 2: Impact of Gas Transmission Remedies on GRC Forecast), available at <http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=352489>.

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
2. Rejected by the Commission	N/A	N/A	N/A
<p>3. <u>Corporate Policy and Standard on Recordkeeping:</u> PG&E shall issue a corporate policy and standard that will:</p> <p>a. Communicate recordkeeping expectations that underlie its post-2010 Corporate Records and Information Management Policy and Standard for all departments and divisions across PG&E. These expectations shall be incorporated into procedures specific to meet the needs of every Line of Business.</p> <p>b. The Information Management and Compliance Department shall design a governance controls catalog for recordkeeping practices to assess compliance with the corporate policy and standard, consistency of behavior with official records being stored in approved systems of record, and timeliness of addressing records during their lifecycle.</p> <p>c. The retention schedule will support the policy by providing retention length for all identified official records to meet legal and regulatory mandates.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁷¹ and thus are not an issue in this proceeding, PG&E is already meeting this proposed remedy through its RIM program, and has provided SED with its current and updated RIM and record retention policies.⁷²</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding.</p> <p>PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

PG&E committed to removing the costs described in the 2017 GRC supplemental testimony from the forecast once the Commission issues its decision in the 2015 GT&S Rate Case, as the adjustment is dependent on a Commission decision in the GT&S rate case regarding the recommendation by TURN that all costs to implement the remedies should be taken out of gas transmission revenues only.

⁷¹ Ex. 1 at 1:22-23 (PWA Report).

⁷² *Id.* at 84 atch. B (PWA Report) (describing PG&E's Response to SED Data Request No. 2); Ex. 4 at 2-5:18 to 2-6:2; *see, e.g.*, Ex. 5, Attachment W010 (Utility Standard TD-4016S, Rev. 1, Gas Operations Records and Information Management); *id.*, Attachment W011 (Utility Standard TD-4017S, Rev. 0, Gas Operations Vital Records Management).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>4. Education and Training Program: PG&E shall develop and implement an education and training program for the gas transmission organization in Records and Information Management principles and practices within an information governance framework. The education and training program shall include the following:</p> <p>a. All staff shall be receive [sic] training to understand the responsibilities and tasks that relate to managing records. These education and training programs shall be updated and offered at regular intervals, at least twice annually, to include amendments to the records management program and for the benefit of new staff.</p> <p>b. There shall be specific and additional training for those staff involved directly in the management of retention and disposal of records. These education and training programs shall be offered at least annually.</p> <p>c. There shall be specific and additional training focusing on all of the recordkeeping systems used within the Gas Operations Organization. Employees and PG&E contractors who have duties using these programs shall be required to attend these training sessions. These education and training programs shall be offered at least annually.</p>	<p>In 2014, 98% of the Gas Operations workforce (consisting of about 5,000 employees) received RIM training, which included information about defining a record and a vital record, provided examples of the difference between a record and a non-record, and described electronic and paper records. In 2015, Gas Operations transitioned to an enterprise-deployed Information Governance training, which is an annual requirement for all employees. As of October 2015, 82% of Gas Operations employees had completed that training, and with the exception of 4% of the employees who were new to the gas organization, 96% of employees were trained by the year end. Consistent with the suggestion made in the PWA Report, Gas Operations plans to develop and implement a monitoring plan to evaluate the effectiveness of records-related trainings that are provided to employees.⁷³</p> <p>Further, to raise awareness about the RIM program and reinforce its importance to PG&E's work, each local headquarters office includes a RIM information board that identifies the local RIM coordinator, the link to the program's website, and information about the program. The Gas RIM team provides targeted training to the Gas RIM Coordinators and supports them as they coach field office employees in meeting their recordkeeping responsibilities and implementing the associated records requirements.⁷⁴</p>	<p><i>Completed.</i> PG&E has implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding.</p> <p>PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁷³ Ex. 4 at 2-6:16 to 2-7:2 (PG&E Reply Testimony, Singh).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>5. Records Management Systems: PG&E shall develop and deploy the systems necessary to manage, maintain, access, and preserve records (physical and electronic, in all formats and media types); their related data, metadata, and geographic location and geospatial content to the extent appropriate in accordance with legal and business mandated rules, utilizing technology that includes appropriate aids to help improve data and metadata quality.</p>	<p>PG&E has already implemented a number of technologies that meet the intent of this proposed remedy. These platforms enable PG&E to implement best practices for standardizing recordkeeping practices and improving its asset data.</p> <p>These platforms include GD GIS, which provides spatial information about distribution assets and attributes of assets (e.g., size, type, and location), along with references to work orders and gas service record numbers.⁷⁵ PWA called PG&E's GD GIS system an "innovative practice."⁷⁶</p> <p>SAP includes an asset management database that contains equipment records, maintenance history and plans, gas leak data, preventive and corrective notifications, scheduling and cost collecting orders, material requisitions, warehouse management, financials, and cost accounting, as well as an inventory of data and maintenance plans related to regulation, valves, corrosion, leak survey, and instrument calibration for the gas distribution system. SAP also provides enhanced process control measures for monitoring the time to complete mapping after construction has been completed.⁷⁷ PWA praised the expanded use of SAP as a "positive technology addition."⁷⁸</p>	<p><u>Completed.</u> PG&E has already made significant progress in implementing these systems for distribution that address the goal intended by the remedy.</p>	<p>Unnecessary.</p>

⁷⁴ *Id.* at 2-7:20-27 (PG&E Reply Testimony, Singh).

⁷⁵ *Id.* at 2-11:25-29 (PG&E Reply Testimony, Singh).

⁷⁶ Ex. 1 at 59 (PWA Report).

⁷⁷ Ex. 4 at 2-14:9-24 (PG&E Reply Testimony, Singh); *id.* at 4-11:28 to 4-14:16 (PG&E Reply Testimony, Trevino).

⁷⁸ Ex. 1 at 56:3-5 (PWA Report).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<i>(continued)</i>	<p>Documentum serves as PG&E's primary electronic records depository, and stores both record content and record metadata (e.g., record creation date, author, editor, versions, format, and lifecycle status), with full-text search capabilities.⁷⁹</p> <p>The three systems interface with each other to provide information necessary to manage assets in real-time for prompt decision making, and can provide advanced analytic capabilities to improve the accuracy of asset data.⁸⁰ For example, PG&E can identify and correct GD GIS records by comparing leak repair information in SAP with its gas distribution maps.⁸¹</p>		
<p>6. Senior Management Accountability: PG&E shall establish accountability for development and implementation of a PG&E governance strategy across gas transmission that shall rest with PG&E Senior Management and a method of accountability shall be developed and implemented.</p>	<p>This proposed remedy does not relate to recordkeeping and is therefore outside the scope of this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding with the implementation of the Gas Operations Records and Information management structure and governance. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

⁷⁹ Ex. 4 at 2-14:30 to 2-15:23 (PG&E Reply Testimony, Singh).

⁸⁰ *Id.* at 2-15:31 to 2-16:17, 2-18:11-14 (PG&E Reply Testimony, Singh).

⁸¹ *Id.* at 2-20:4-6 (PG&E Reply Testimony, Singh).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>7. Employees for RIM: PG&E shall identify and document the employees responsible for implementing the Records and Information Management program for gas transmission.</p>	<p>As of the third quarter of 2014, Gas RIM had eight full-time employees dedicated to the implementation and oversight of gas records management, with plans to add additional resources starting in 2016. Gas Operations has also established a Gas RIM Coordinator Network consisting of approximately 120 employees across its 152 field offices. RIM Coordinator responsibilities include functioning as subject matter experts for assigned locations, providing guidance and support to their offices, and work groups on management, protection, and control of records.⁸²</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>8. Consistent Standard Practices: PG&E shall develop consistent standard practices that include gas transmission records management linked to corporate policies on information governance.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁸³ and thus are not at issue in this proceeding, PG&E sent copies of its updated RIM policies, standards and procedures to SED during discovery and their quality, completeness and usefulness was not raised by SED as an issue in this proceeding.⁸⁴</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

⁸² *Id.* at 2-7:8-20 (PG&E Reply Testimony, Singh).

⁸³ Ex. 1 at 1:22-23 (PWA Report).

⁸⁴ *Id.* at 84 attach. B (PWA Report) (describing PG&E's Response to SED Data Request No. 2).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>9. Retention Periods: PG&E shall implement mandated retention periods for all records relevant to gas transmission.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁸⁵ and thus are not at issue in this proceeding, PG&E has provided SED with its current and updated record retention policies.⁸⁶ See PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 8, <i>supra</i> p. C-26.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. See <i>supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>10. Standards to Conform with RIM Policies: PG&E shall ensure that each gas transmission standard conforms with Records and Information Management (RIM) policies for gas transmission.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures⁸⁷ and are therefore not at issue in this proceeding. Regardless, PG&E is already meeting this proposed remedy with regard to gas distribution through its development and implementation of its RIM program.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. See <i>supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁸⁵ *Id.* at 1:22-23 (PWA Report).

⁸⁶ *Id.* at 84 attach. B (PWA Report) (describing PG&E's Response to SED Data Request No. 2).

⁸⁷ *Id.* at 1:22-23 (PWA Report).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>11. <u>Treatment of Active and Inactive Records:</u> PG&E shall include the treatment of active and inactive records in its Records and Information Management (RIM) Policy for gas transmission.</p>	<p>PG&E is already meeting this proposed remedy with regard to gas distribution through its development and implementation of its RIM program.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>12. <u>Traceable, Verifiable, and Complete Standard:</u> PG&E's records management processes shall be managed and maintained in accordance with the traceable, verifiable, and complete standard, including retention of physical and digital pipeline records for the "life of the asset."</p>	<p>PG&E implemented a process for distribution activities that addresses the goal intended by this remedy. The traceable, verifiable, and complete records standard is defined to include gas distribution records contained in PG&E's job files. PG&E's standard, Gas As-Built Packages, TD 4461S, defines job file, which includes the information necessary to validate MAOP. Moreover, PG&E's record retention schedule includes retention periods for the records contained in job files. The intent of this remedy has already been implemented by PG&E.</p>	<p><i>Completed.</i> PG&E has already implemented a process for distribution activities that addresses the goal intended by the remedy.</p>	<p>Unnecessary.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>13. Accuracy of Records: The accuracy and completeness of data within gas transmission records shall be traceable, verifiable, and complete and when errors are discovered, the record shall be corrected as soon as correct information is available and the reason(s) for each change shall be documented and kept with the record.</p>	<p>PG&E has already implemented processes for distribution activities that address the goal intended by this remedy. PG&E has two processes to update as-builts or make changes to the records in the gas distribution GD GIS system to ensure accuracy and completeness.</p> <p>The first is in creating the as-built. As PG&E testified, it has implemented a number of process improvements to the process of creating and documenting as-builts.⁸⁸</p> <p>The second process is in Mapping corrections. As PG&E testified, PG&E upgraded and documented a new Map Correction procedure TD-4460P-11 "Gas Map Corrections," effective October 17, 2014.⁸⁹ This new process allows any PG&E employee to submit map corrections directly to mapping through CAP via a mobile application, web page, or directly into SAP. These are then tracked, completed by mapping, and closed. The record from the field (<i>e.g.</i>, correction form or drawing) is stored within SAP under the CAP notification number.</p>	<p><u>Completed.</u> PG&E has already implemented processes for distribution activities that address the goal intended by the remedy.</p>	<p>Unnecessary.</p>

⁸⁸ Ex. 4 at 4-9:3-14 (PG&E Reply Testimony, Trevino); *id.* at 5-12:20 to 5-13:9 (PG&E Reply Testimony, Singh); *see* Ex. 5, Attachment W017 (TD-4461P-20-F01, Checklist for Distribution Mains and Services As-Built Packages); Ex. 7, Attachment W080 (TD-4461M, Rev. 0, As-Built Drawing Handbook).

⁸⁹ Ex. 4 at 4-5:22 to 4-6:15 (PG&E Reply Testimony, Trevino); *id.* at 5-22:22-28, 5-25:14-26 (PG&E Reply Testimony, Singh); *see* Ex. 6, Attachment W029 (Utility Procedure TD-4460P-11, Rev. 0, Gas Map Corrections).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>14. Standard Format for Job Files: PG&E shall create a standard format for the organization of a job file so that PG&E personnel will know exactly where to look in a file folder, or set of file folders, to find each type of document associated with a job file. At a minimum, a job file will contain traceable, verifiable, and complete records to support the MAOP of the pipeline segment installed; design documentation; purchase documentation showing the sources and specifications of equipment purchased; permits; environmental documents; field notes; design, construction, and as-built drawings; x-ray reports and weld maps; pressure test records; correspondence with the CPUC; and inspection reports and correspondence.</p>	<p>PG&E has already implemented processes for distribution activities that address the goal intended by this remedy. <i>See supra</i> PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 12.</p> <p>PG&E is agreeing to SED's Proposed Remedies (g) and (h) to address MAOP issues. <i>See</i> PG&E's Response to SED's Proposed Remedies (g) and (h), <i>supra</i> pp. C-13 to C-14.</p> <p>Finally, distribution job files, which do not require all of the same documentation (such as x-ray reports and weld maps), are currently accessed through SAP.</p>	<p><i>Completed.</i> PG&E has already implemented processes for distribution activities that address the goal intended by the remedy. <i>See also</i> PG&E's Response to SED's Proposed Remedies (g) and (h), <i>supra</i> pp. C-13 to C-14.</p>	<p>Unnecessary.</p>
<p>15. Job File Data To Be Immediately Accessible: Job file data, including drawings, for all parts of the active PG&E gas transmission system shall be immediately accessible from multiple locations. The development of a complete and accurate catalog of job files that can be searched immediately shall be included within this objective.</p>	<p>PG&E has already implemented processes for distribution activities that address the goal intended by this remedy. <i>See supra</i> PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 12, <i>supra</i> p. C-28.</p> <p>Distribution job file information is accessed electronically through SAP.</p>	<p><i>Completed.</i> PG&E has already implemented processes for distribution activities that address the goal intended by the remedy.</p>	<p>Unnecessary.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>16. Missing Records: The information that was contained in PG&E's historic records and documents, and that has been identified as "missing or disposed of," and is necessary to be retained for the safe operation of the pipelines, pursuant to laws, regulations and standards, and the PG&E retention schedule, shall be recovered. This recovery shall include but not be limited to:</p> <ul style="list-style-type: none"> a. updating and verification of data in engineering databases, such as the leak database, GIS, and the integrity management model, b. updating plat sheets and other engineering drawings, and c. updating and organizing job files. <p>When PG&E cannot locate records, it may apply conservative assumptions consistent with the requirements of Ordering Paragraph 1 of D. 11-06-017. PG&E shall be required to fully document any engineering-based assumptions it makes for data that has been identified as "missing or disposed of." Such assumptions must be clearly identified and justified and, where ambiguities arise, the assumption allowing the greatest safety margin must be adopted.</p>	<p>PG&E's responses to SED's Proposed Remedies (a)–(e) address the recordkeeping issues raised in this proceeding. Moreover, PG&E's gas plat sheets are now updated in GD GIS and distribution job files are maintained in SAP. See PG&E's Responses to SED's Proposed Remedies (a) and (c), <i>supra</i> pp. C-5 to C-7, C-10, and PG&E's Responses to Adopted Transmission Recordkeeping OII Remedies (5), (14), and (15), <i>supra</i> pp. C-24 to C-25, C-30. Thus, this remedy is duplicative to those proposed remedies.</p>	<p><i>In Progress.</i> See PG&E's responses to SED's Proposed Remedies (a)–(e), <i>supra</i> pp. C-5 to C-12.</p>	<p>Inapplicable to distribution assets and duplicative of PG&E's Responses to SED's Proposed Remedies (a)–(e).</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>17. <u>Document Changes to Policies, Standards, and Procedures:</u> PG&E shall document adoption of, and changes and amendments to, policies, standards and procedures within the Gas Operations Organization (or its successor division(s) with responsibility for design, construction, operations, maintenance, testing, safety, and integrity management of PG&E's natural gas pipeline system). The documentation shall include the reasons for adoption, amendment, or cancellation of the policies, standards, and procedures. An audit trail of changes shall be maintained and retained for as long as the standard is in effect. If a policy, standard, or procedure is cancelled, a copy of the policy, standard or procedure in effect at the time of cancellation, as well as the reason for its cancellation, shall be preserved permanently, taking heed of potential changes in technology that may render documents unreadable in the future.</p>	<p>While PWA testified that any violations in this OII were not the result of defective procedures⁹⁰ and thus are not at issue in this proceeding, PG&E already currently tracks and maintains changes to policies and procedures.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

⁹⁰ Ex. 1 at 1:22-23 (PWA Report).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>18. Identification of Salvaged and Reused Pipes: PG&E will identify each section of pipe that has been salvaged and reused within the PG&E gas transmission system. For each section of pipe identified, PG&E will change the installed date in its GIS and its IM model to the date the pipe was originally installed in the PG&E pipeline system.</p>	<p>PG&E does not use salvaged pipe in its Gas Distribution system. This proposed remedy is therefore inapplicable to this proceeding.</p>	<p><i>N/A</i></p>	<p>Inapplicable to gas distribution.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>19. Rejected. TURN proposed remedy 1 adopted instead:</p> <p><u>TURN Proposed Remedy 1 – Centralized Database to Track Re-Used Pipes:</u> PG&E shall create a centralized database to track where it has placed reused or otherwise reconditioned pipe in its system. For each such segment, the database should show the date of manufacture of the segment, if known. If this date is unknown, the database should so indicate, to ensure that the segment is given appropriate attention in integrity management. The database should include a link to reliable and readily accessible documentation showing, for each reused or otherwise reconditioned pipe segment, that all steps necessary to prepare the segment for installation were performed and inspected. If such documentation is unavailable, the centralized documentation should so indicate so that the segment will be given appropriate attention in integrity management. PG&E will maintain this database so long as there are sections of reused pipe in the PG&E operating gas transmission pipeline system.</p>	<p>PG&E does not use salvaged pipe in its Gas Distribution system, and therefore, this proposed remedy is inapplicable to this proceeding.</p>	<p><u>N/A</u></p>	<p>Inapplicable to gas distribution.</p>

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>20. PwC Recommendations: PG&E shall implement the recommendations included in the final PricewaterhouseCoopers (PwC) audit report. (TURN Exhibit 16, Appendix B).</p>	<p>The PwC report is dated March 31, 2012, and many of its recommendations have been implemented as ordered in the Gas Transmission Records OII. Ordering these recommendations again is duplicative. Others, while still implemented, are not germane to the disputed issues in this case. Two of the recommendations, C.1 and C.2, relate to ongoing RIM training and are appropriate in this context, but duplicative because already ordered and in progress as a result of the Transmission Recordkeeping OII proceeding. The PwC recommendations, therefore, are duplicative, unnecessary, or not relevant to issues in this proceeding.</p> <p><i>See PG&E's Responses to PwC Recommendations, infra pp. C-37 to C-63.</i></p>	<p><i>See PwC Recommendations, infra pp. C-37 to C-63.</i></p>	<p><i>See PwC Recommendations, infra pp. C-37 to C-63.</i></p>
<p>21. Audit of Recordkeeping Practices: Using independent auditors, CPSD will undertake audits of PG&E's recordkeeping practices within the Gas Transmission Division on an annual basis for a minimum of 10 years after the final decision is issued in OII. 11-02-016.</p>	<p>PG&E currently works with SED through SED's division audit process to identify and correct gas distribution deficiencies including those associated with records, and will continue to do so as the Commission directs.</p> <p>Additionally, PG&E uses a robust system of internal auditing, which is directly overseen by senior management, and which includes audits of recordkeeping practices.⁹¹</p> <p>PG&E has also made extensive use of independent auditors and experts, such as Lloyd's Register.⁹² PWA has commended PG&E's use of both internal and external audits.⁹³</p> <p>There has been no evidence presented in this proceeding that suggests a separate, independent auditor is necessary.</p>	<p><i>N/A</i></p>	<p>Unnecessary.</p>

⁹¹ Ex. 4 at 3-23:3-20 (PG&E Reply Testimony, Higgins).

⁹² *Id.* at 1-22:1-32 (PG&E Reply Testimony, Howe); *id.* at 2-8:13-16 (PG&E Reply Testimony, Singh).

⁹³ Ex. 1 at 69:3-4, 75:1-6 (PWA Report).

ADOPTED TRANSMISSION RECORDKEEPING OII REMEDIES PROPOSED BY CPSD⁶⁶

Proposed Remedial Measure	PG&E's Response	Status ⁶⁷	Proposed Ruling
<p>22. <u>Correct Deficiencies Identified From Audits:</u> PG&E will correct deficiencies in recordkeeping discovered as a result of each CPSD audit and will report to CPSD when such deficiencies have been corrected.</p>	<p>See PG&E's Response to Adopted Transmission Recordkeeping OII Remedy 21, <i>supra</i> p. C-35.</p>	<p><u>N/A</u></p>	<p>Unnecessary.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>A.1. RIM Program: Seek commitment to be a gas utility with a leading RIM program by highlighting benefits and declaring the objectives with tangible milestones such as industry awards and presenting at industry conferences on RIM initiatives.</p>	<p>PG&E's Gas Operations organization has already committed to using the Information Governance Maturity Model for records management developed by ARMA International to design a Gas RIM program in accordance with the recordkeeping and information management guidance in PAS 55 and ISO 55001.⁹⁶ As part of its efforts to achieve ARMA Level 3 maturity, in August 2015 PG&E began the electronic records portion of a multi-year records management initiative, with a focus on information controls and security.⁹⁷ The initiative is scheduled to be completed in 2018.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. Thus, this remedy is duplicative. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>A.2. RIM Program: Strive to be a gas utility with a top RIM program by leveraging leading practices from within gas and other industries.</p>	<p><i>See</i> PG&E's Response to PwC Recommendation A.1, <i>supra</i>.</p>	<p><i>See</i> PG&E's Response to PwC Recommendation A.1, <i>supra</i>.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁹⁴ For a report on the status of the implementation of these remedies, see Pacific Gas and Electric Co.'s Compliance Plan for Remedies Ordered by D.15-04-024, *Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016 (June 8, 2013), available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M152/K482/152482664.PDF>.

⁹⁵ This column provides the status of the implementation of the remedy, to the extent that PG&E undertook activities consistent with the intent of the remedy or as such a remedy was applied to the gas distribution systems in the GT Records OII. "In Progress" indicates that the remedy is being implemented or is ongoing as part of the GT Records OII. "Completed" indicates that the remedy has been implemented as to distribution activities through the Transmission Recordkeeping OII or that PG&E has implemented measures to address the intent of the remedy as part of its ongoing efforts to improve its distribution records and distribution system safety.

⁹⁶ Ex. 4 at 2-8:1-4 (PG&E Reply Testimony, Singh).

⁹⁷ Ex. 5, Attachment W014 at W014.003 (PG&E's Response to SED Data Request No. 114).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
A.3. RIM Program: Leverage the RIM Principles and the attributes of RIM Maturity to devise a Gas RIM strategy that seeks to move the Gas organization to a higher maturity level.	<i>See supra</i> PG&E's Response to PwC Recommendation A.1, <i>supra</i> p. C-37.	<i>See supra</i> Response to PwC Recommendation A.1, <i>supra</i> p. C-37.	Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.
B.1. Corporate Records Management: Align with Corporate Records Management Policy and Retention Schedule; at a minimum including Legal (with possible Outside Counsel review) Corporate Secretary, and Corporate Information Governance Council.	While PWA testified that any violations in this OII were not the result of defective procedures ⁹⁸ and thus are not an issue in this proceeding, PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding.	<i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.	Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.
B.2. Gas Governance Structure: Create Gas Governance Structure, including Gas Information Governance Council, Gas Steering Committee, Gas RIM Director Role, Regional/Business Unit Managers, and Coordinators	The gas governance structure is not an issue in this proceeding.	<i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.	Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.

⁹⁸ Ex. 1 at 1:22-23 (PWA Report).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>B.3. RIM Project Plan: Gas RIM Director/Council should create and own the RIM Project Plan/PMO and track progress, challenges, milestones reached, and evaluate necessary changes to plan and timelines, etc.</p>	<p>The role of the RIM director is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>B.4. Gas Compliance Organization: Consider creating a formal Gas Compliance organization leveraging the existing “Standards and Policies” function.</p>	<p>Creation of a Gas Compliance organization is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>B.5. Retention Schedules: Consolidate and update Retention Schedules. Retention schedule to apply to all content regardless of storage medium (<i>e.g.</i>, database, paper files, image system, microfiche, backup tape, etc.)</p>	<p>Retention schedules are not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>B.6. <u>Corporate Records Management Policy:</u> Update/Enhance Corporate Records Management Policy.</p>	<p>The Corporate Records Management Policy is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>B.7. <u>Corporate Records Management Policy and Retention Schedule:</u> Embed the Corporate Records Management Policy and the Retention Schedule within each Gas function.</p>	<p>The Corporate Records Management Policy and the Retention Schedule are not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>C.1. RIM Training: Provide RIM training to all Gas Operations employees.</p>	<p>In 2014, 98% of the Gas Operations workforce (consisting of about 5,000 employees) received RIM training, which included information about defining a record and a vital record, providing examples of the difference between a record and a non-record, and describing electronic and paper records. In 2015, Gas Operations transitioned to an enterprise-deployed Information Governance training, which is an annual requirement for all employees. As of October 2015, 82% of Gas Operations employees had completed that training, and with the exception of 4% of employees who were new to the gas organization, 96% of the remaining Gas Operations employees were trained by the end of the year. Consistent with the suggestion made in the PWA Report, Gas Operations already has plans in place to develop and implement a monitoring plan to evaluate the effectiveness of records-related trainings that are provided to employees.⁹⁹</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>C.2. Gas Operations Training: Create a holistic Gas Operations learning curriculum that provides timely, job-specific, technical, and soft-skills training, and includes RIM concepts and principles.</p>	<p>RIM concepts and principles were incorporated into Gas Operations courses as part of the Gas Operations curriculum training development strategy.¹⁰⁰</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

⁹⁹ Ex. 4 at 2-6:16 to 2-7:2 (PG&E Reply Testimony, Singh).

¹⁰⁰ Pacific Gas and Electric Co.'s Compliance Plan for Remedies Ordered by D.15-04-024, *Order Instituting Investigation on the Comm'n's Own Motion into the Operations & Practices of Pac. Gas & Elec. Co. with Respect to Facilities Records for its Nat. Gas Transmission Sys. Pipelines*, I. 11-02-016, at 89 (June 8, 2013), available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M152/K482/152482664.PDF>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>C.3. Additional Training: After initial RIM training courses are conducted, identify functions and/or individuals that require additional Change Management and training assistance.</p>	<p>Change Management training is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>C.4. Gas RIM Program Communication Plan: Develop and execute a Gas RIM Program Communications plan to enhance and sustain executive support for the RIM initiative, and educate all employees on the importance of an effective RIM program.</p>	<p>The Gas RIM Program Communication plan is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>C.5. “A Day in the Field” Visits: Promote cross-level camaraderie and knowledge sharing by having leadership conduct “a day in the field” visits at least once a year, and observe the work, including the RIM-related practices.</p>	<p>The need for cross-level camaraderie is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>C.6. <u>Additional Resources</u>: Identify additional resources (internal or external) with appropriate skill sets and experience to work at direction of identified PG&E resources with Quality Control and Vendor Management expertise. Leverage resources execute on planned temporary or interim activities to resolve any backlog of work (filing, mapping, other functions as deemed appropriate), and to help prep and organize records at locations in advance of larger digitization efforts.</p>	<p>PG&E is already addressing this remedy through its implementation of the RIM program.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>C.7. <u>Cross-Functional Teamwork</u>: Promote Cross-Functional Teamwork to improve processes, including data accuracy and quality.</p>	<p>The need for cross-functional teamwork is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>C.8. <u>Employee Feedback and Incentives:</u> Solicit, evaluate and respond to feedback from employees. Provide incentives to employees for generating cost savings and other innovative ideas, without compromising quality.</p>	<p>The need for employee feedback and incentives is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>C.9. <u>Gas Employee of the Month:</u> Consider creating a “Gas Employee of the Month” program to highlight employees who have demonstrated positive impact to RIM culture.</p>	<p>The need to highlight employee impact on RIM culture is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>C.10. <u>Gas Records Management Day:</u> Consider creating a “Gas Records Management Day” to promote and get employees involved in various RIM activities. Leverage as an employee morale event/teaming event/training.</p>	<p>Employee engagement in RIM activities is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>C.11. <u>Consolidating Gas Distribution Mappers:</u> Consider consolidating Gas Distribution Mappers to centralized location to facilitate consistency and controls. Retain 1-2 local field resources for local requests and M&C assistance.</p>	<p>PG&E provided testimony in this proceeding on the structure of its Mapping organization, which has been significantly consolidated.¹⁰¹ None of the parties raised any issues on the remaining distributed mapping workforce. No evidence was presented to suggest that the current practice is not operating well or that a change at this time would “facilitate consistency and controls.”</p>	<p><i>Completed.</i></p>	<p>Duplicative of actions PG&E has taken regarding its gas distribution mapping function.</p>
<p>C.12. <u>Success Criteria and Metrics:</u> Develop appropriate success criteria, and appropriate metrics with quality aspect. Leverage the metrics in a positive light to promote progress and achievements. Recognize employee contributions to support the organization's goals as it relates to RIM principles and initiatives.</p>	<p>Employee recognition is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>D.1. <u>Standard on Metrics:</u> Create a Standard that indicates that all reporting metrics must include a Quality component, or a footnote as to the method in which the quality of the metrics was supported/confirmed.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹⁰² and thus are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

¹⁰¹ Ex. 4 at 4-3:1 to 4-4:18 (PG&E Reply Testimony, Trevino).

¹⁰² Ex. 1 at 1:22-23 (PWA Report).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.2. <u>RIM Issues Reporting:</u> Create a requirement and protocol for reporting any potential systemic data quality or RIM issues to immediate Supervisor and Gas RIM Director.</p>	<p>PG&E's procedures go beyond this recommendation. PG&E's CAP program is used to identify, track, and resolve recordkeeping and other issues. Any PG&E employee can report any issue in CAP and the issue is assigned to the appropriate personnel. This ensures that the issues are assigned to the appropriate, responsible personnel, who may or may not be the RIM supervisor or director. None of the parties raised any issues about RIM reporting.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>D.3. <u>Employee Departure/Transfer Process/Procedure:</u> Review and update the process/procedure for Employee Departure/Transfer to ensure transition of Gas Records from employee custody or on hard drives/servers to corporate storage and management.</p>	<p>Employee departure and ensuing transfer of records is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to apply this to distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>
<p>D.4. <u>Disposition Procedure:</u> Create a formal Disposition Procedure to address records eligible for disposition, including preservation obligations, approval for disposition, and appropriate disposition techniques.</p>	<p>Records disposition is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.5. <u>Integrate RIM Controls:</u> Integrate RIM controls within Gas Operations business processes.</p>	<p>RIM controls were not raised as an issue in the evidentiary record of this proceeding. However, PG&E has made significant investment in its RIM program, as described in testimony.¹⁰³</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

¹⁰³ Ex. 4 at 2-7:4 to 2-8:25 (PG&E Reply Testimony, Singh).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.6. <u>Guidelines for Storage of Physical Records</u>: Create formal guidelines for the storage of physical records, including temperature/moisture conditions, and consideration of fire-safe location for vital physical records.</p>	<p>PG&E has already published two standards that address this proposed remedy.</p> <p>First, PG&E recently published Gas Operations Records Information Management standard (TD-4016S),¹⁰⁴ which defines what a “record” is and sets forth general rules for the retention, storage, and disposal of both paper and electronic records. Moreover, the Enterprise Records and Information Management Physical Storage Standard was published on February 25, 2016. This standard specifies the requirements for the storage of physical records to insure that necessary controls are in place to prevent damage due to environmental hazards or natural disasters.</p> <p>Second, PG&E published Vital Records Management standard (TD-4017S),¹⁰⁵ which describes the requirements for creating and handling those records that are essential to PG&E's ongoing gas operations and for complying with its legal or business obligations. It requires Gas Operations to create an inventory of vital records, which must be updated at least annually, as well as a plan to protect and ensure access to those records.</p> <p>PG&E sent copies of these record information management policies and procedures to SED during discovery and their quality, completeness, and usefulness was not raised by SED as an issue in this proceeding.¹⁰⁶</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

¹⁰⁴ Ex. 5, Attachment W010 (Utility Standard TD-4016S, Rev. 1, Gas Operations Records and Information Management). This document was published on October 15, 2014. *Id.*

¹⁰⁵ *Id.*, Attachment W011 (Utility Standard TD-4017S, Rev. 0, Gas Operations Vital Records Management). This document was published on December 4, 2013. *Id.*

¹⁰⁶ Ex. 1 at 84 atch. B (PWA Report) (describing PG&E's Response to SED Data Request No. 2); *see also* Ex. 4 at 2-5:18 to 2-6:2 (PG&E Reply Testimony, Singh).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.7. <u>Iron Mountain Records:</u> Develop and execute plan for evaluating historical Gas Paper Records currently at Iron Mountain (post Cow-palace review effort in 2011) and determine what should be scanned, and appropriate disposition.</p>	<p>Iron Mountain records are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.8. <u>Alignment With Corporate Records Management Policy and Refresh Schedule:</u> Establish process and protocol to align with Corporate Records Management Policy, and refresh Retention Schedule, Gas RIM standards, Gas guidelines and procedures, Gas process maps, and Gas data inventory based on a defined refresh schedule (Annual Review or other trigger such as a new Regulation).</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹⁰⁷ and alignment with Corporate Records Management Policy is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹⁰⁷ Ex. 1 at 1:22-23 (PWA Report).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.9. <u>Records and Information Inventory</u>: Create a gas records and information data inventory to identify and locate all (paper and electronic) Records and Information populations.</p>	<p>PG&E has already implemented this remedy for gas distribution records. In 2014, Gas Operations RIM published a revised Gas Operations Records Retention Schedule which was based on the gas records inventory. This inventory involved interviews with subject matter experts in each of the respective Gas Operations functional groups. The gas records inventory will be updated, as additional records are identified. An updated Records Retention Schedule was published in January 2016 as an attachment to the revised corporate standard, GOV-7101S. Gas Operations RIM is currently conducting the periodic review of the inventory, to include interviews with subject matter experts and the validation of inventory by supervisors and managers. The inventory certification of the updated inventory by directors and officers is scheduled for October 31, 2016.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.10. <u>Records in Unstructured Data Stores</u>: Identify Records in Unstructured data stores, such as Shared Drives and Intranet.</p>	<p>Unstructured data stores are not an issue in this proceeding.</p> <p>In any event, PG&E has already implemented measures to address unstructured data stores for its distribution records. Specifically, as detailed in Chapter 2 of PG&E's Reply Testimony, in 2015, PG&E's Gas Operations organization initiated a multi-year effort to address the electronic records portion of the initiative, including the migration of certain electronic records from unstructured systems (such as SharePoint, share drives, and hard drives) to centralized structured databases (such as Documentum).¹⁰⁸</p> <p>Documentum is an electronic document management system that is being implemented to serve as PG&E's primary electronic records repository for unstructured data, such as word processor documents, PDFs, and images.¹⁰⁹ Once fully integrated, Documentum will interface with GD GIS and SAP and PG&E personnel will be better able to electronically standardize the records management processes and access the associated records.</p>	<p><i>In Progress</i>. PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>
<p>D.11. <u>Migration From Discrete Storage Locations</u>: Develop a strategy and process to migrate active and historical electronic information from discrete storage locations (<i>i.e.</i>, shared drives, PCs, etc.) to a centralized repository (<i>i.e.</i>, Documentum).</p>	<p>Migration of electronic data in discrete storage locations are not an issue in this proceeding.</p> <p>In any event, PG&E has already implemented an initiative to migrate unstructured data to Documentum. <i>See</i> PG&E's Response to PwC Recommendation D.10, <i>supra</i> p. C-51.</p>	<p><i>See</i> PG&E's Response to D.10, <i>supra</i> p. C-51.</p>	<p>Unnecessary.</p>

¹⁰⁸ Ex. 4 at 2-6:8-14 (PG&E Reply Testimony, Singh).

¹⁰⁹ *Id.* at 2-15:1-6 (PG&E Reply Testimony, Singh).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.12. <u>Compliance Review on RIM Program Components:</u> Perform Gas Operations Compliance review on RIM Program components, such as Corporate Records Management Policy, Retention Schedules, and other related RIM procedures.</p>	<p>While RIM Program components are not an issue in this proceeding, PG&E has made significant investment in its RIM program, as described in testimony.¹¹⁰</p> <p>Moreover, PG&E sent copies of its updated RIM policies, standards and procedures to SED during discovery and their quality, completeness and usefulness was not raised by SED as an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.13. <u>Interim Audit Plans:</u> Create interim Audit Plans (assess risk, define frequency, scope, type of audit) for Quality Assurance and Internal Audit, and define RIM controls for audit plans.</p>	<p>PG&E uses a robust system of internal auditing, which is directly overseen by senior management, and which includes audits of recordkeeping practices.¹¹¹ Internal Auditing group performs audits to evaluate the effectiveness of controls on new and existing business processes, which allows management to then address any control gaps and check whether the processes are being implemented effectively.¹¹² As a reflection of the value PG&E places on its internal audit process, a risk compliance committee comprised of senior management is responsible for ensuring that corrective actions are implemented following an internal audit or any other QM review.¹¹³</p> <p>Thus, PG&E's current internal audit program goes beyond this proposed remedy.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs as PG&E already has an ongoing audit process.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹¹⁰ *Id.* at 2-7:4 to 2-8:25 (PG&E Reply Testimony, Singh).

¹¹¹ *Id.* at 3-23:3-20 (PG&E Reply Testimony, Higgins).

¹¹² *Id.* at 5-22:16-19 (PG&E Reply Testimony, Singh).

¹¹³ Ex. 1 at 76:4-6 (PWA Report); Ex. 4 at 1-8 (PG&E Reply Testimony, Howe); *id.* at 3-23:9-20 (PG&E Reply Testimony, Higgins).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.14. <u>Enhance Long Term Audit Plans</u>: Once the RIM program is stabilized, update and enhance long term Audit Plans (assess risk, define frequency, scope, type of audit) for Quality Assurance and Internal Audit, and define RIM controls for audit plans.</p>	<p>See PG&E's Response to PwC Recommendation D.13, <i>supra</i> p. C-52.</p>	<p><i>In Progress</i>. See PG&E's Response to PwC Recommendation D.13, <i>supra</i> p. C-52.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.15. <u>Review Gas Ops Business Processes</u>: Review the current list of Gas Operations business processes to validate and document a comprehensive list of all gas operational processes (that should follow the full information lifecycle).</p>	<p>Gas Ops business processes are not an issue in this proceeding.</p>	<p><i>In Progress</i>. PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs as PG&E already has a list of processes and periodically updates them.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.16. <u>Gas Business Process Maps</u>: Evaluate and refresh Gas business process maps for the newly defined/validated list of processes, instituting a rigorous protocol for standardization and approval by process owners.</p>	<p>Gas business process maps are not an issue in this proceeding.</p>	<p><i>In Progress</i>. PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. See <i>supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D. 17. <u>Revise Standards and Work Procedures:</u> Align and revise all Standards and Work Procedures to the updated list of all Gas Operations Processes.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹¹⁴ and thus are not an issue in this proceeding. Gas business processes are also not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>D.18. <u>Log of Special Projects and Initiatives:</u> Develop and maintain comprehensive log of all Gas Operations “special projects” and initiatives to ensure any new Records or data stores that may be created as a part of the effort has appropriate RIM practices.</p>	<p>New records or data stores created as a result of special projects and initiatives are not an issue in this proceeding and PWA noted PG&E’s control processes associated with GD GIS implementation.¹¹⁵ PG&E’s RIM team functions across Gas Operations to assure appropriate controls are established for gas distribution records.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹¹⁴ Ex. 1 at 1:22-23 (PWA Report).

¹¹⁵ *See, e.g., id.* at 55:30 to 56:8, 58:1-10, 58:19-26 (PWA Report).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.19. <u>Challenges and Backlog of Gas Maps:</u> Address known challenges and backlog of Gas Maps.</p>	<p>PG&E already has a robust process to track the timely progress of distribution mapping updates and corrections. The Mapping Department utilizes SAP to track progress and monitor the status of mapping corrections with a target goal of completion within 30 days.¹¹⁶ Mapping management meets monthly to discuss Gas Mapping Department performance based on a monthly "Placemat," a dashboard the Mapping Department generates each month that tracks various performance metrics of the team.¹¹⁷</p>	<p><i>Completed.</i> PG&E has already implemented a process for distribution activities that addresses the goal intended by the remedy.</p>	<p>Unnecessary.</p>
<p>D.20. <u>Review of RIM Standards:</u> Add RIM Program standards to the five year standards review process in Gas Operations.</p>	<p>PWA testified that any violations in this OII were not the result of defective procedures¹¹⁸ and thus are not an issue in this proceeding. RIM standards are also not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs as PG&E already has a review process for its standards.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

¹¹⁶ Ex. 4 at 4-11:29 to 4-12:3 (PG&E Reply Testimony, Trevino).

¹¹⁷ *Id.* at 4-3:8-12 & fig. 4-1 (PG&E Reply Testimony, Trevino).

¹¹⁸ Ex. 1 at 1:22-23 (PWA Report).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>D.21. <u>RIM Program Improvements</u>: Once RIM program and processes achieve stability, identify and develop continuous improvement activities for the Gas RIM Program.</p>	<p>PG&E has already committed to using the Information Governance Maturity Model for records management developed by ARMA International to design a Gas RIM program in accordance with the recordkeeping and information management guidance in PAS 55 and ISO 55001.¹¹⁹ The Company has made significant improvements since the publication of the PwC report four years ago.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.1. <u>Data Cleansing Effort</u>: Conduct rigorous and thorough Data Cleansing effort prior to any consolidation or migration of electronic data into new or interim systems.</p>	<p>As discussed in PG&E's response to SED proposed remedy (a), PG&E undertook a number of initiatives to identify discrepancies and gaps in its distribution records during the migration to GD GIS. <i>See</i> PG&E's Response to SED Proposed Remedy (a), <i>supra</i> pp. C-5 to C-7.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>
<p>E.2. <u>Identify Data Gaps</u>: Identify potential data completeness gaps through results of Data Cleanse exercises.</p>	<p><i>See</i> PG&E's Response to PwC Recommendation E.1, <i>supra</i> p. C-56.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>

¹¹⁹ Ex. 4 at 2-8:1-4 (PG&E Reply Testimony, Singh).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>E.3. Information for Future Processes: As part of Business Requirements gathering efforts, evaluate what Information should be gathered to support future state Gas Operations processes and advancement of Integrity Management analysis.</p>	<p>While this is not an issue raised in this proceeding, PG&E already gathers information for future processes and integrity management analysis. As discussed in PG&E's Response to SED Proposed Remedy (a) and Adopted Transmission Recordkeeping OII Remedy 5, PG&E undertook an enormous effort to migrate its distribution records to GD GIS, SAP, and Documentum. It also implemented a number of initiatives using data analytics to improve the state of its records. <i>See</i> PG&E's Response to SED Proposed Remedy (a) and Adopted Transmission Recordkeeping OII Remedy 5, <i>supra</i> pp. C-5 to C-7, C-24 to C-25.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy. Gas distribution has the desired analytic capabilities with the implementation of GD GIS, continued use of SAP, and growing use of Documentum.</p>	<p>Unnecessary.</p>
<p>E.4. Capture Paper-Based Records and Documents Electronically: Building on Records digitization efforts from the MAOP Validation project, continue to capture paper-based records and documents electronically.</p>	<p>This proposed remedy is not applicable to this proceeding. Moreover, PG&E is using digitized records in its distribution MAOP analysis.</p>	<p><i>Completed.</i> PG&E is already implementing the intent of this remedy. PG&E is already using digitized records to perform its distribution MAOP analysis.</p>	<p>Unnecessary.</p>
<p>E.5. Stand-Alone Repositories: Standardize the use of stand-alone repositories such as SharePoint and email so they can align and potentially integrate with RIM procedures going forward.</p>	<p>Stand-alone repositories are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>E.6. Email Storage: Create and execute process to transfer data captured in emails to appropriate permanent repositories and discourage the use of email as a data store/"personal electronic filing cabinet."</p>	<p>Email storage is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.7. Shared Drives and Hard Drives: Identify and migrate official Records stored on network Shared Drives and local personal computer hard drives to a designated central repository (Documentum). Consider eliminating Shared Drives for some functions.</p>	<p>The use of shared drives and hard drives is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.8. Off-line Data Stores: Identify, develop, and execute remediation plan for other electronic "off-line" data stores such as floppy/hard disks, CDs/DVDs, USB drives, external hard drives, etc.</p>	<p>Off-line data stores are not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>E.9. <u>Detailed Business Requirements Gathering:</u> Enhance Detailed Business Requirements Gathering for Technology Systems. This should include specific discussions with various relevant workforce populations on: User Interface, Gas Processes Work Flows, Reporting/Metrics, Taxonomy, Metadata, Security Access, and Protection Model.</p>	<p>Business requirements gathering is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>E.10. Target Operating Model: Develop a holistic Gas Operations, Business Applications “Target Operating Model” that includes all Gas (Distribution and Transmission) systems, Records, and data stores.</p>	<p>Gas Operations operating model is not an issue in this proceeding.</p> <p>Moreover, PG&E has already implemented a number of technologies that meet the intent of this proposed remedy. These platforms enable PG&E to implement best practices for standardizing recordkeeping practices and improving its asset data.</p> <p>These platforms include GD GIS, which provides spatial information about distribution assets and attributes of assets (<i>e.g.</i>, size, type, and location), along with references to work orders and gas service record numbers.¹²⁰</p> <p>SAP includes an asset management database that contains equipment records, maintenance history and plans, gas leak data, preventive and corrective notifications, scheduling and cost collecting orders, material requisitions, warehouse management, financials, and cost accounting, as well as an inventory of data and maintenance plans related to regulation, valves, corrosion, leak survey, and instrument calibration for the gas distribution system.¹²¹</p> <p>Documentum serves as PG&E's primary electronic records depository, and stores both record content and record metadata (<i>e.g.</i>, record creation date, author, editor, versions, format, and lifecycle status), with full-text search capabilities.¹²²</p>	<p><i>In Progress.</i> PG&E is already implementing the intent of this remedy.</p>	<p>Unnecessary.</p>

¹²⁰ *Id.* at 2-11:25-29 (PG&E Reply Testimony, Singh).

¹²¹ *Id.* at 2-14:9-20 (PG&E Reply Testimony, Singh); *id.* at 4-11:29 to 4-14:16 (PG&E Reply Testimony, Trevino).

¹²² *Id.* at 2-14:32 to 2-15:23 (PG&E Reply Testimony, Singh).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<i>(continued)</i>	The three systems interface with each other to provide information necessary to manage assets in real-time for prompt decision making, and can provide advanced analytic capabilities to improve the accuracy of asset data. ¹²³		
E.11. Data Entry Quality Control: Ensure all system user interfaces in which new information or data points are entered, incorporate appropriate preventative and detective controls to help minimize data quality issues at point of entry.	PG&E's testimony describes data quality management in detail. For example, PG&E implemented the use of a mobile A Form, which includes many validation rules that allow the leak repair information to be captured completely and accurately as the leak is repaired in the field. ¹²⁴	<i>Completed.</i> PG&E has implemented the intent of this remedy for distribution activities.	Unnecessary.
E.12. Intranet as Resource: Leverage the PG&E Intranet Gas Operations page for a centralized, searchable, and easily navigable resource of all Gas Policies, Procedures, and Standards (including RIM-related).	Accessibility of Gas policies, procedures, and standards is not an issue in this proceeding.	<i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.	Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.

¹²³ *Id.* at 2-15:24 to 2-16:17, 2-18:11-14 (PG&E Reply Testimony, Singh).

¹²⁴ *Id.* at 2-20:14-18 (PG&E Reply Testimony, Singh).

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status ⁹⁵	Proposed Ruling
<p>E.13. Legal Hold: Develop and execute formal “Hold In Place” process for Documentum to facilitate preservation under Legal Holds. Ensure reporting/auditing of Holds In Place is also included.</p>	<p>Legal hold process is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. PG&E has identified and proposed for removal associated forecast costs in the appropriate rate setting proceedings. <i>See supra</i> note 70.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.14. Contract Management System Plug In/Interface to Documentum: Consider a Contract Management System plug-in/interface to Documentum system to facilitate robust, consistent, and controlled Gas Contracting lifecycle process.</p>	<p>Contract management is not an issue in this proceeding.</p>	<p><i>In Progress.</i> PG&E is implementing this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered in the Transmission Recordkeeping OII proceeding.</p>
<p>E.15. Technology and Systems Landscape: Reassess/re-examine the existing Technology and Systems landscape periodically to determine if Gas Operations needs are still being met in the future.</p>	<p>As discussed throughout PG&E’s testimony, PG&E is continually evaluating its technology and systems to improve its gas distribution recordkeeping practices. In any event, technology and systems landscape is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>

PRICEWATERHOUSECOOPERS RECOMMENDATIONS IN TRANSMISSION RECORDKEEPING OII⁹⁴

Proposed Remedial Measure	PG&E's Response	Status⁹⁵	Proposed Ruling
<p>E.16. Gas IT Technical Support: Create and implement a Gas IT technical support sub-group (via the phone help line) that can more specifically address Gas Operations systems issues.</p>	<p>IT technical support is not an issue in this proceeding.</p>	<p><i>Completed.</i> PG&E has already implemented this remedy, for both transmission and distribution activities, in response to the Transmission Recordkeeping OII proceeding. There were no incremental costs to implement this remedy for distribution activities.</p>	<p>Duplicative of remedies already ordered and implemented in the Transmission Recordkeeping OII proceeding.</p>